



Upper Clutha Transport Report - Appendices

**Shaping our Future Vision for the Upper Clutha incorporating
Land, Air and Water Transport:**

*“The Queenstown Lakes District has a functional, innovative,
integrated, multi-modal and sustainable transport system that supports
a thriving, healthy community and enhances the visitor experience.*

*Implementing this vision, Wanaka will be open to change and new
technologies, giving priority to initiatives that enhance connectivity and
the character of the area.”*

Forum Report March 2017

APPENDICES

SECTION

Appendices:

1. [Land Transport background information](#) – including key success factors, KPI's, impediments and more information on recommendations.
 - a. Map showing potential transport hub/parking areas
 - b. Map showing potential bypass route
 - c. Flow diagram showing aspects of 'Community transport network'
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Appendix 1: Land Transport

The following table and maps formed the background information for the sub group work on land transport. The overall vision for the district was also the vision for land transport.

Vision for Land Transport:

“The Queenstown Lakes District has a functional, innovative, integrated, multi-modal and sustainable transport system that supports a thriving, healthy community and enhances the visitor experience.

Implementing this vision, Wanaka will be open to change and new technologies, giving priority to initiatives that enhance connectivity and the character of the area.”

LAND TRANSPORT

<i>Transport themes</i>	<i>What does success look like?</i>	<i>KPI's – how do we measure success?</i>	<i>Gap/Impediments to delivering the vision?</i>	<i>Action points to achieve the vision / recommendations</i>
1. ARTERIAL ROUTES: <ul style="list-style-type: none"> State Highways & Wanaka roads 	<p>State Highways (SH) have sufficient width, bridges are two-laned and roading network is safe and efficient for all road users (cars, trucks, bikes).</p> <p>Network resilience, multiple points of entry maintained</p> <p>Road upgrades meet future growth needs (e.g. speed and lane markings appropriate around airport given this will become an education/business hub as per Air Transport vision)</p>	<ul style="list-style-type: none"> Reduced crash stats and near misses between cyclists and vehicles Reduced crash stats in areas where one-lane bridges did exist Feedback from local cycling groups re in arterial routes where pinch points existed previously Increase in cycle tourists in The Upper Clutha area. 	<p>QLDC reactionary not visionary planning. Need long term vision and planning, requires funds.</p> <p>Plans need to keep up with growth rates.</p> <p>Requirement in CBD area to provide travel plan and/or car parks for new developments.</p>	<ul style="list-style-type: none"> Maintenance/upgrade of roads around The Upper Clutha to ensure network resilience. Infrastructure upgrade priorities such as; <ul style="list-style-type: none"> Converting one lane bridges Passing lanes On-road cycle lane provision on state highway and local arterial roads Road sealing of key tourist routes such as Matukituki Widening of key tourist/high use routes
<ul style="list-style-type: none"> Bypass 	<p>Bypass for local, ordinary and tourist traffic to maintain good traffic flows and ease CBD congestion,</p>	<ul style="list-style-type: none"> Less congestion on roads such as Brownston which need to be slower speed areas due to CBD proximity/supermarket. 	<ul style="list-style-type: none"> Cost Road widening and intersection treatments to accommodate faster flowing road network 	<p>Create arterial route (road design/reconfiguration) between Aubrey Road and Cardrona Valley Rd, i.e. via Anderson and Golf course road</p>
<ul style="list-style-type: none"> Bypass 	<ul style="list-style-type: none"> HVT bypasses CBD but service/delivery vehicles can access efficiently/effectively. 	<ul style="list-style-type: none"> Consultation/feedback from RTA (Road Transport Association) 	<ul style="list-style-type: none"> Cost Numbers of HVT currently using (this will increase though) 	<ul style="list-style-type: none"> Bypass via Studholme Rd (joining up Studholme Rd along paper road between Oakridge and Wanaka Station). By pass between Orchard and Riverbank/Ballantyne
<ul style="list-style-type: none"> Impact on CBD 	<ul style="list-style-type: none"> Minimal CBD traffic, but service vehicles have effective and efficient access. 	<ul style="list-style-type: none"> CBD Is pleasant space to be in 	<p>Trucks are getting bigger which challenges access in areas that are traffic calmed for slow speeds</p>	<p>Use of service lanes?</p>

LAND TRANSPORT CONT'D

Transport themes	What does success look like?	KPI's – how do we measure success?	Gap/Impediments to delivering the vision?	Action points to achieve the vision / recommendations
<p>2. CONNECTIVITY:</p> <ul style="list-style-type: none"> • Effective and efficient flow • Between developments • Outlying regions • Connecting to what? (see point 3 below re connecting to hubs and public transport) 	<ul style="list-style-type: none"> • Public transport links to hubs and hotspots (see 3 below) 	<ul style="list-style-type: none"> • Numbers using public transport 	<ul style="list-style-type: none"> • No public transport service currently. • Currently driving and parking in and around The Upper Clutha has easy parking and low congestion compared to other more populated centres. 	<ul style="list-style-type: none"> • Appealing/inviting public transport on appropriate scale that's efficient and frequent. E.g. regular shuttle service between park and ride/walk hubs and key areas (3 Parks, CBD, schools, sports). Consider open air golf cart or "tuk tuks", combine as tourist and commuter experience. Has to be appealing.
	<ul style="list-style-type: none"> • Underpasses for walking/biking, e.g. to get under SH8 	<ul style="list-style-type: none"> • Numbers using underpasses 	<ul style="list-style-type: none"> • Cost • Identifying where underpasses go (pedestrians/cyclists reluctant to go out of way) 	<ul style="list-style-type: none"> • Consider underpasses more – similar to what farmers put in for cows (approx \$180-250k). Identify key areas e.g. 3 Parks.
	<ul style="list-style-type: none"> • Safe and attractive walking/cycling connections from outlying areas to The Upper Clutha CBD, along arterial routes and across CBD. Consider key connection points (schools, sports grounds, 3 Parks, CBD, dense residential areas). • Separated paths will encourage children, has to be continuous, surface fit for commuting purpose (rather than recreational). • Pedestrian/cycle friendly connections at intersections 	<ul style="list-style-type: none"> • Higher pedestrian volumes results in benefits to local business (the slower you travel the more you spend) • Infrastructure used by schools 	<p>Connections not there, not direct, or finish at tricky intersections. Nearly all paths currently designed for recreation use rather than commuting.</p> <p>Businesses resist pedestrianising public spaces, with the view that if you "can't park right outside" you'll lose business (research indicates the opposite is true, see http://www.arppa.org/cidadepedonal/resumos/Abstract%20Rodney%20Tolley.pdf). Re "walkability" in 4.</p>	<ul style="list-style-type: none"> • Consider connectivity specifically for these hotspots: <ul style="list-style-type: none"> ○ Walking/cycling link between Aubrey Rd (Northlake) + Mt Iron/3 Parks (via Cleughs) to avoid Anderson Rd ○ Between Mt iron car park (dog) to Anderson rd roundabout ○ Sealed track along Aubrey rd connecting Northlake to schools ○ Connections through schools to MAC and onto Lismore (WPS already has, MAC doesn't), include Kelly's Flat • Path infrastructure fit for purpose • Good track surface and consider sealing of gravel paths where they are identified as commuter links (e.g. Hawea Flat to Albert Town/Aubrey Rd to schools) • Good community consultation to fit user needs • Provide "end of use facilities" (commuters/tourists pay for showers, bike parks, secure locking, charging for e-bikes etc)

LAND TRANSPORT CONT'D

Transport themes	What does success look like?	KPI's – how do we measure success?	Gap/Impediments to delivering the vision?	Action points to achieve the vision / recommendations
2. Connectivity cont'd (Between Developments, Travel Behaviour Change and Arterial routes)	<ul style="list-style-type: none"> • Structure plans for new residential developments reflect the high priority of walking and cycling as per Council's transport strategy 	<ul style="list-style-type: none"> • Developers held to account to follow through with what was agreed at planning stage (acknowledge some flexibility may be needed if changes mean this is no longer practical) 	<ul style="list-style-type: none"> • Disconnect between Council's priorities (and community's wishes) and District Plan • Not enough measures to compel developers to provide infrastructure or deliver as promised 	District Plan Review? Submissions at Resource Consent stage Annual Plan submissions
	<ul style="list-style-type: none"> • Travel Behaviour Change – see 5 See connectivity re arterial routes in 1 above 			
3. FUTURE NEEDS: <ul style="list-style-type: none"> • Transport hubs • Securing land/identifying future land needs; Bypass roads Paper roads Street design	Hubs exist in outlying areas as well as on perimeter of CBD, in key areas and with good facilities (e.g. toilets, information). These hubs connect with Public transport service, good walking/cycling connections, and options for bike rental. Consider/imagine new technologies (e.g. driverless cars, drones, hydro fuel cells, e bikes, bikes with trailers, uber taxis, green bikes, monorail)	<ul style="list-style-type: none"> • Land acquisition at potential sites to secure future development (see action points). • Land banking/liaison with NZTA, Council 	<ul style="list-style-type: none"> • No hubs exist at present • No comprehensive/coordinated information about; parking facilities, walking/cycling facilities and routes. Currently piecemeal. • Not clear where information can be found from. • Information needs to be 'on the ground' so users can see it and make spontaneous decisions to walk/bike instead of driving. 	Potential Transport Hubs (i.e. park and ride/walk/PT): <ul style="list-style-type: none"> ○ Vet Cnr (Hawea turnoff) ○ Anderson Rd roundabout (Cleughs) ○ Opp DOC office (where SARS helicopter pad is alongside MacPherson) ○ Hedditch St (nr Lismore Park - park and walk into town). North 3 Parks (ex sewage ponds) ○ The <i>Wanaka Recreation Reserve</i> (west of Pembroke Park) is a significant land space in central Wanaka that needs to be part of any strategic thinking regarding future transport needs, and possible provision for skiers and campervans (consider other facilities such as toilets, dump station & water) ○ Golf practice green near old Paradiso corner ○ May need to consider hub needs for; Lake Hawea, Luggate, Cardrona or other The Upper Clutha areas. <ul style="list-style-type: none"> • Users can access recharging facilities for electric cars/bikes at some hubs • Promotion and Information about all walking/cycling facilities in greater The Upper Clutha and CBD, transport hubs and their facilities and what they connect to is easy to find and follow – available via Council/Wanaka Tourism/Info centres and smart phone app.

LAND TRANSPORT CONT'D

Transport themes	What does success look like?	KPI's – how do we measure success?	Gap/Impediments to delivering the vision?	Action points to achieve the vision / recommendations
4. CBD: <ul style="list-style-type: none"> • Lakefront plan • Lake is the magnet • Pedestrian areas – “Walkability” 	Slower speeds in areas where there are high numbers of children or high numbers of pedestrian movements/cyclists (e.g. schools, CBD)	Fewer crashes involving pedestrians, cyclists and vehicles. Pedestrians and cyclists have priority in key areas	Infrastructure currently doesn't encourage slow zone environments needed around schools and CBD where pedestrian numbers high/vulnerable road users are	Traffic calming measures in key areas (outside MAC, possibly other schools, CBD, new developments along school routes)
	<ul style="list-style-type: none"> • Lake is the magnet • People need to connect with the Lake • No lakefront parking between CBD & McDougall/Ardmore 	<ul style="list-style-type: none"> • Level of pedestrians using lake in this area 	Council has approved buses to continue parking at Lakefront area log cabin which will increase congestion	Lakefront development centred around enjoyment of the immediate environment
	<ul style="list-style-type: none"> • CBD growth is sustainable and environmentally friendly 	<ul style="list-style-type: none"> • Change to DP to reflect this requirement. 	New constructions/workplaces in CBD aren't required to provide car parks for customers/workers (but this is a requirement outside CBD)	New workplaces submit travel plans as a requirement through Resource Consent process
	<ul style="list-style-type: none"> • Walking/cycling connections around CBD are easily identified on the ground, are promoted and easily found through smart phone/app use and information centres 	<ul style="list-style-type: none"> • Numbers of visitors and residents using walking connections • Encourages future property developers to emulate model 	Connections between streets are only known to locals or those who go off exploring. Need to be more user friendly.	Small subtle language-free signage can indicate where these to encourage people to walk more from one place to another within and across CBD
5. PEOPLE/CULTURE CHANGE <ul style="list-style-type: none"> • Travel Behaviour Change • Safety of roads • Different work patterns (e.g. work from home) • Social needs • Tourism – cater for campervans, PT connections to hubs (see 2 connectivity) 	<ul style="list-style-type: none"> • Fewer people driving • Increased numbers walking, cycling, scootering • Numbers using park and ride hubs • No increase (or decrease in congestion) • Congestion same or less than what it is currently at peak times 	<ul style="list-style-type: none"> • Travel Behaviour change in workplaces • Travel Behaviour Change for all students for e.g. at MAC, car parking already an issue – numbers driving decreases • Goal of 90% of school children either bus, walk, bike, or scooter to school. • Walking/cycling infrastructure is separated from traffic with few road crossings • Numbers using upgraded or new walking/cycling paths 	Schools and some workplaces are time poor and don't have specific people who can own and implement an effective travel plan	Schools/businesses could be supported in submitting travel plans in exchange for national /local funding of incentives to use transport hubs, biking and walking options (e.g. showers, bike parks, maintenance evenings, education, cycle trains)

LAND TRANSPORT CONT'D				
Transport themes	What does success look like?	KPI's – how do we measure success?	Gap/Impediments to delivering the vision?	Action points to achieve the vision / recommendations
6. ENVIRONMENT/ PARKING FOR: <ul style="list-style-type: none"> • Campervans • Commuters • CBD users • cyclists 	See 2 – Transport Hubs.			

Potential Transport Hubs – draft drawings



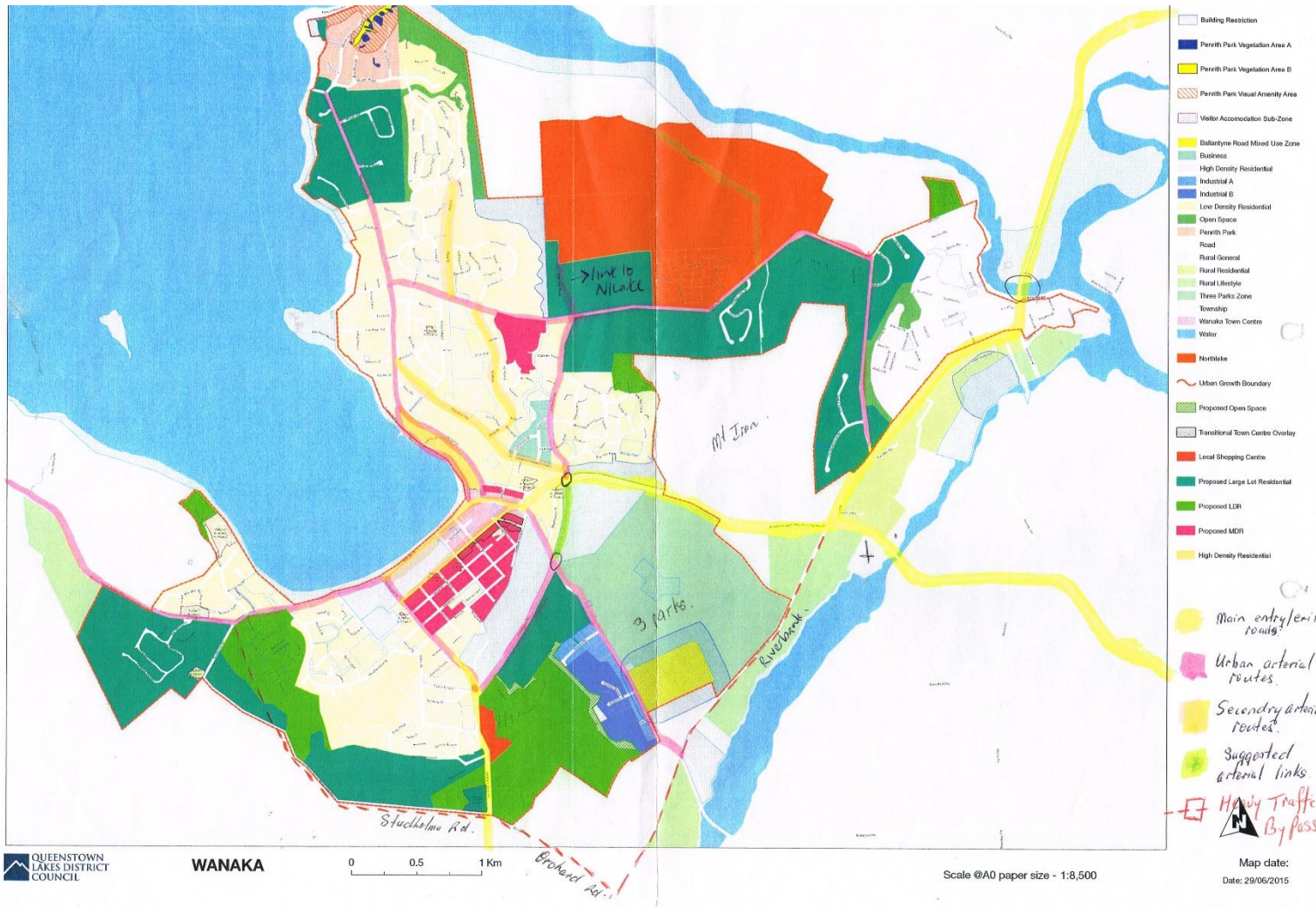
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Land Transport – the key factors in assessing future transport options:



Land Transport – Main Routes and potential bypass routes



Appendix 2: Air Transport

Sub-Group Work on Air Transport

Vision for Air Transport:

“Wanaka airport is a destination for high yielding innovative businesses creating a sustainable aviation hub for the region”

The current situation relating to air transport in The Upper Clutha includes

- Over March 2016, total landing numbers were up 30% from the 12 months previously
- Wanaka Airport is a non-controlled airspace
- Currently Wanaka Airport is at total capacity for available hangar space “hangarage” which drives need for land acquisition
- Up to 200 people currently work at airport in various capacities
- Noise boundary exists
- Hangars are on septic tank system which limits further growth
- Flights diverted from Queenstown go to Dunedin or Invercargill, not Wanaka.
- Length and strength of runway limits size of aircraft

Potential for Future includes:

- Providing high value employment in the region
- Infrastructure upgrade (e.g. project pure)
- Lots of demand from interested parties wanting to set up at airport
- Private/chartered flights
- Demand for private jet parking
- Education – e.g. flying schools
- Developing flight engineering/maintenance training
- Establish regional aero club servicing The Upper Clutha and Queenstown
- NASA establishes a full-time base
- Scenic/tourist flights and skydiving, heli-ski/bike
- Promote Wanaka Airport as a visitor destination (e.g. flight simulator, museum, cafe etc)
- With increased population comes growing demand (resident/visitors) to fly to main centres.
How to plan to meet this via;
 - Better regional connections (land transport – The Upper Clutha to Queenstown)
 - Flights direct from Wanaka to centres meeting this demand but still maintaining The Upper Clutha’s unique character (need to complement not compete with Queenstown Airport)



AIR TRANSPORT

<i>What does success look like?</i>	<i>KPI's – how do we measure success?</i>	<i>What is the gap with today?</i>	<i>Impediments to delivering the vision?</i>	<i>Action points to achieve the vision / recommendations</i>
<i>*NB: Decisions around Governance/ownership and land availability/acquisition shown in point 1 are fundamental to attaining all other ideas contained in this table.</i>				
1. Financially reliable and sustainable returning a dividend to owners/rate payers*	<ul style="list-style-type: none"> Continued high occupancy rates after expansion Understand what the cap for use/access is and monitor numbers using Wanaka Airport. 	<ul style="list-style-type: none"> Currently Wanaka Airport runs at a loss Ownership and management: Currently owned by council and managed by QAC. No investment happening currently. Need to know current usage to gauge how busy Wanaka Airport is Lack of available land. 	<p>Note re sewage upgrade – currently moving from septic tank to reticulation (aiming to tap into Project Pure).</p> <p>Future of ownership land acquisition decisions, RMA and other regulations, want to limit growth/air traffic to maintain The Upper Clutha character, NIMBY.</p>	<ul style="list-style-type: none"> QAC takes ownership and management of Wanaka Airport with QLDC maintaining their majority shareholding (Queenstown Airport model). Importance of User Group for Wanaka Airport. There should be The Upper Clutha-based person on governance/ownership group to ensure The Upper Clutha's interests represented.
2. Wanaka Airport is a vibrant educational and business hub attracting high value employees. Wanaka Airport creates an aviation centre of excellence, supporting specialist and diverse businesses.	<ul style="list-style-type: none"> New businesses setting up, employing qualified specialist staff. Purchase of land will enable development of airport facilities. Level of availability of facilities for users and potential users 	<p>Lack of infrastructure (land, hangars, parking and services) for e.g.;</p> <ul style="list-style-type: none"> - waiting list for hangars - many businesses want to but can't set up - impediment to current users <p>Lack of strategic planning</p>	Resourcing infrastructure water/sewage upgrade	<ul style="list-style-type: none"> Purchasing available strategic land adjacent to airport (future proof to 2050 vision and beyond). Identifying businesses that fit with vision. Individual businesses pay fee for infrastructure upgrade. Formalisation of Air Traffic Control?
3. Airport is safe and sustainable environmentally and in line with SOF Transport vision	Measure air quality/noise control re emissions/pollution	Air and noise levels not currently issues Currently gaps with Health and Safety and Security (e.g. getting "permission" to access runway is casual)		

AIR TRANSPORT CONT'D

What does success look like?	KPI's – how do we measure success?	What is the gap with today?	Impediments to delivering the vision?	Action points to achieve the vision / recommendations
4. More convenient air travel for those in the Upper Clutha basin (either flying direct from Wanaka or good land connection to other areas such as QT)	Scheduled flights from Wanaka to main centres AND/OR cost-effective, fast and frequent public transport connection The Upper Clutha to Queenstown (tunnel, monorail)	<ul style="list-style-type: none"> No scheduled flights with timetables that meet identified need to main centres. Current connection to QT via land is expensive, takes time. To achieve vision of Wanaka being default airport to Queenstown, need extensive infrastructure/runway upgrade at considerable expense. Lack of suitable scheduled timetabled flights 	Population and levels of demand don't yet warrant regular scheduled flights.	Negotiation with potential flight providers
5. Wanaka and Queenstown airports complement and collaborate rather than compete	<p>QAC has (part) ownership and management of Wanaka Airport in these ways:</p> <ul style="list-style-type: none"> - Wanaka sister airport to QT (e.g. complementary regional services) - Wanaka is designated as default airport if natural disaster/emergency means Queenstown can't be used 	<ul style="list-style-type: none"> Runway length and strength, air traffic control services to cater for suitable aircraft. Infrastructure upgrade Re point 1 above in this column 	<ul style="list-style-type: none"> Funding costs 	<ul style="list-style-type: none"> Upgrade airport/runway facilities etc to allow Wanaka Airport to be default airport for Queenstown. Cost is \$\$millions to extend runway 300m to cater for suitable aircraft.

Appendix 3: Water Transport

Sub-Group Work on Water Transport

Vision for Water Transport:

“To ensure the best possible user/visitor lake/waterway experience whilst preserving the natural beauty, water quality and environmental integrity of our most valuable asset.”

The current situation relating to water transport in The Upper Clutha includes:

- Peak periods to deal with
- Pinch points/congestion – Eely Pt
- Conflict between users, can include noise issues
- Road access issues to various sites (marina ramp, Eely pt, Mt burke)
- Low cost \$50 for season or \$5 a pop
- Need to improve services, parking, toilets, in outlying areas where appropriate
- No accurate figures collected on lake usage or parking – all are averages and guesses

Potential for Future includes:

- Improve lake experience and spread facilities around the lakes
- Ramp fees to encourage use of facilities further away (and closer to boating destination)
- Higher fees in congested/easy access areas such as Eely Pt
- Promoting use of outlying areas (e.g. Makarora Boundary Creek, the Neck, Lake Hawea, Mt Burke)
- Idea of using swipe card to access marina via barrier arms, helps collect data
- Need to cater for non-boat users but banning jet skis may not be the solution. Apply speed restrictions in high use areas, which could be extended at peak times or populated areas
- Extend 5 knot restriction to a larger area e.g. 200m off shore further out, but need exclude Eely Pt – will always be important hub for boat access.
- Better info for tourists about lake use and access
- Develop/improve key boat ramp areas
- Funds from fees to go towards maintenance
- More education re environmental factors
- Eliminate need for 2 stroke motors on lake?
- Provision for cleaning of boats to prevent spread of algae bloom/didymo etc
- How to cater for commercial users?
- Public say they don't want huge growth here (lakefront development consultation)
- Monitor water quality
- Three parks as place to service boats to keep congestion out of town
- Land banking for future development
- Lake considered as a transport option in the future to assist with keeping visitors and tourists off the road.

WATER TRANSPORT

*NB; “The Upper Clutha’s waterways environment” refers to the unique and natural beauty that makes up the environment of Wanaka’s lakes and waterways

What does success look like?	KPI’s – how do we measure success?	What is the gap with today?	Impediments to delivering vision?	Action points to achieve the vision / recommendations
<p>All can visit Wanaka’s waterway areas whether in motorised or non-motorised craft while preserving the unique qualities of <i>Wanaka’s waterways environment</i>.*</p>	<ul style="list-style-type: none"> • Recreational users (motorised and non-motorised including swimmers) co-exist with commercial and tourist operators without compromising Wanaka’s waterways environment. • Understand what key sites in the Wanaka waterways environment can cope with to establish a cap on access for commercial operators and monitor numbers using to manage this. 	<ul style="list-style-type: none"> • We don’t know resource consent limits/management on numbers being able to access waterways for commercial users. • No information known currently about how many people are using lake and waterways, system at the moment is ad hoc. • Should be able to identify future needs from estimated population growth figures, then calculate water users from estimated tourist growth figures. May find that once reaches certain threshold the opportunities for commercial development could snowball. • Note that once facilities are in there snowballing may happen, i.e. increased use. 	<ul style="list-style-type: none"> • Lack of cohesion between different agencies and interested parties. • Need to coordinate better so overarching issues can be better managed (e.g. on water quality, funding of facilities). See Action re establishing a Lake Management Group. 	<p>Establish a “Lake Management Group” representing all water users to help better coordinate and manage range of waterway issues such as;</p> <ul style="list-style-type: none"> - Implementing appropriate polices and restrictions. - Having strong links to wider agencies such as ORC, Otago University, LINZ, water research organisations. - Input from all waterways users, i.e. motorised and non-motorised as well as representation from key groups such as Guardians of the Lake. - Monitors water quality issues - Monitors noise control - Manages amenities and safety - Closes ‘gap’ on information knowledge around current and projected use. <p>Note - Creating this group requires no infrastructure and is something that can be started now. SOF Taskforce to recommend this as an action ASAP.</p> <ul style="list-style-type: none"> • Differential pricing (higher fees for easy access areas such as main ramp, Eely Pt). • Fees go back into maintenance of facilities. • Consider appropriate technology to deal with numbers during peak periods to make access more efficient e.g. swipe cards (which could also provide some key information on lake use). • Cap on commercial use – see KPIs. • Consider how and where water users’ access can be managed or restricted (e.g. use of swimming or boating only areas to ensure all users can enjoy waterways). • Consider extending speed or access restrictions at peak times in high use areas, or where swimmers are (e.g. Lake Hawea/Roys Bay)

WATER TRANSPORT CONT'D				
What does success look like?	KPI's – how do we measure success?	What is the gap with today?	Impediments to delivering vision?	Action points to achieve the vision / recommendations
<p>Access and use of lake is widely dispersed and caters for different user needs.</p> <p>Higher numbers using facilities and waterways in outlying areas.</p>	<p>Facilities cater for commercial needs and those of their clients (e.g. elderly, less-abled)</p> <ul style="list-style-type: none"> • Toilets • Ramps • Parking <p>Provision to clean boat (didymo/algae bloom).</p> <p>Access and enjoyment is enhanced</p>	<ul style="list-style-type: none"> • Facilities need upgrading • Don't always cater for user needs • No provision for boat cleaning • Storage – need for future boat storage service area? 	<p>Land availability and lake access.</p>	<p>Prioritise which areas should have upgraded facilities and nature of those facilities.</p> <p>Promote, develop and improve key use areas. (promote use of outlying areas and providing facilities appropriate to these).</p> <p>Coordinate with other agencies (e.g. DOC, LINZ) re need for land acquisition/land banking to ensure key areas can be used for development of facilities (e.g. Mt Burke).</p> <p>Consider possibility of public transport facility in future where practical (e.g. Edgewater-Eely Pt, Dublin Bay or Glendhu connections to Roys Bay).</p>
<p>Road access to key areas safe, appropriate fit for purpose.</p>		<p>Potential conflict and safety issues for different road users along key boat/trailer routes (e.g. Glendhu Bay).</p>		<p>Promote/design to encourage use of three parks for service provision for boat/trailer users (e.g. service stations)</p>
<p>Promoting Wanaka waterways as tourist + recreational destination.</p>	<p>Lake user numbers/data</p>	<p>Communication gaps on lake and rivers create safety risks/issues.</p>	<p>Queenstown has govt funding behind marine radio, Wanaka doesn't</p>	<p>Phone links/marine radio.</p>
<p>Wanaka waterways are safe and enjoyable</p>	<p>Good info to locals and tourists such as;</p> <ul style="list-style-type: none"> • safe boat access areas • Awareness raising on hazard areas • local area information • basic water safety education • Educational/ environmental factors 	<ul style="list-style-type: none"> • Currently not clear where rocks are and where safe launching spots are (varies with lake level). • Need to identify and mark (e.g. lights) hazardous areas such as Beacon Point, rocks at Edgewater, slip/shallow area off Peninsula particularly dangerous when lake low). • Communication gaps on lakes and rivers create safety risks/issues. • Queenstown has govt funding behind marine radio, not Wanaka 	<ul style="list-style-type: none"> • Poor Lighting • Lack Communication facilities 	<ul style="list-style-type: none"> • The Upper Clutha Radio Telephone users association used to exist with UCT and emergency services as chief users, but only they can use? Can others use this service, how? Discuss with SARS or similar people who will know answer to this question • Resourcing of communication facilities to improve radio/cellphone coverage in lake/river areas where there are currently holes. • Explore possibilities of funding behind this

Appendix 4: Glossary of Terms as they relate to Transportation

Accessibility¹ - people's overall ability to reach service, activities, and destinations. The quality of accessibility has tremendous direct and indirect impacts.

Several general factors can affect accessibility:

- Motor vehicle travel conditions. Vehicle travel speeds, affordability and safety.
- Quality of other modes. Walking, cycling, public transit, virtual working, delivery services speeds, convenience, comfort, affordability and safety.
- Transport network connectivity. Density of paths and roadway connections, and therefore the directness of travel between destinations, plus the quality of connections between modes, such as the ease of walking and cycling to public transport hubs.
- Land use proximity. Development density and mix, and therefore distances between activities.

Active Transport Modes – refers to transport that requires people to be active e.g. walking/cycling, e-bikes, skateboarding, scootering, hoverboards, segways etc.

Congestion² - **Traffic congestion** is a condition on transport networks that occurs as use increases, and is characterized by slower speeds, longer trip times, and increased vehicular [queuing](#). The most common example is the physical use of roads by vehicles. When traffic demand is great enough that the interaction between vehicles slows the speed of the traffic stream, this results in some congestion. As demand approaches the capacity of a road (or of the intersections along the road), extreme traffic congestion sets in. When vehicles are fully stopped for periods of time, this is colloquially known as a **traffic jam** or **traffic snarl-up**.



Congestion is often linked to a Level of Service (LOS). This is the LOS that the transport network provides and is normally rated A-F. The LOS is generally set by the transport authority at a level that society will tolerate.

¹ Evaluating Accessibility for Transportation Planning, Measuring People's Ability to Reach Desired Goods and Activities, 23 March 2016, Victoria Transport Policy Institute

² Wikipedia

Connectivity³ - *Connectivity* refers to the density of connections in path or road networks, and the directness of links. A well-connected network has many short links, numerous intersections, and minimal dead-ends. As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations, creating a more [Accessible](#) and [Resilient](#) transport system that reflects [Complete Streets](#) (multi-modal) principles. Connectivity can apply both internally (streets within that area) and externally (connections with arterials and other neighbourhoods).

Functional - designed to be practical, useful and safe for **all** users.

Future Transport Modes – refers to future modes of transport currently being proposed e.g. automated/driverless vehicles but also refers to transport modes potentially not fully developed yet.

Mobility⁴ - mobility refers to the movement of people or goods. Mobility is how far you can go in a given time, as opposed to accessibility, which is how many useful or valuable things you can do.

Mobility has substitutes such as telecommunications or delivery services.

Accessibility, Connectivity and Mobility are often interchanged and have different meanings. They are complementary to each other and conflicting at the same time, e.g. people in NZ have easy access to private motor vehicles, however this easy access to private vehicle sometimes limits access to the places we want to go through resulting in congestion.

Safe System Approach⁵ - in a roading context a Safe System approach has the objective of eliminating deaths and serious injuries to all road users (motorists, motorcyclists, cyclists and pedestrians), through shared responsibility for creating a safe road system. *Good planning and design sets the foundation of a safe road environment.*

The Safe System approach to road safety was first adopted by the Netherlands in 1990, Sweden's "Vision Zero" in 1997, and United Nations Tylosand in 2009 and the subsequent 2010 United Nations "Decade of Action for Road Safety 2011 - 2020".

The Safe System Approach is based on a number of principles:

1. **People make mistakes** - Some crashes are unavoidable. The transport system must accommodate these so that when they do occur, they do not result in death or serious injury.
2. **Our bodies are vulnerable** - There are limits to the amount of force our bodies can be subjected to before we are injured. In a Safe System, crash forces are managed such that they do not lead to death or serious injury.
3. **All parts of the system work together to provide a 'forgiving' road transport system** - Aiming to ensure that the forces in collisions do not exceed the limits of human tolerance must be considered when planning, designing and maintaining road, vehicles and speeds. Road users should be alert and compliant when interacting with a road network.
4. **Responsibility for road safety is shared by all** - Those who plan, design and manage the road, as well as road users, share responsibility for road safety.

³ Victoria Transport Policy Institute, Transportation Demand Management Encyclopaedia

⁴ Human Transit, How Clearer Thinking about Public Transit Can Enrich Our Communities and Our Lives, Jarrett Walker

⁵ Austroads Research Report AP-R488-15 Safe System in the Planning Process, June 2015.

The Safe System model consists of four pillars around human tolerance to crash forces:

- Safe road (transport) infrastructure - planning and design of roads and transport systems that minimise the risk of crashes occurring, and when crashes do occur, ensure that death or serious injury are minimised.
- Safe speeds - that suit the function and environment of the road, so that crash impact forces are managed within human tolerances impact speeds for different users and types of crashes that are survivable and don't result in death or serious injury.
- Safe vehicles - that incorporate design features and technology that minimise the likelihood of crashes and protect road users (vehicle occupants and other road users, including pedestrians and cyclists), when crashes do occur. Development of vehicle safety, e.g. star ratings.
- Safe road users - should be alert, comply with road rules and engage in safe behaviour. They are supported through education, information, legislation and enforcement relating to road and vehicle use.

New Zealand's *Integrated Planning Strategy* defines integrated planning as:

“...[bringing] land-use planning, and transport planning and investment together, to deliver an affordable transport system that supports a growing economy, safe and vibrant communities and a healthy environment, now and into the future.”

The relationship of the Safe System Approach to planning practices is in dealing with the built form and transport, planners play a pivotal role in influencing the road network, e.g. strategic and statutory planning and both affect land-use decisions, which in turn affects the road and transport network. It follows that land-use planning has direct influence on the transport network, with the potential to influence the design of roads, how the road network is used, and what infrastructure safety investments are required in the future. Planning plays a critical role in providing a Safe System.

Safe System principles in planning to provide healthy, safe and sustainable travel within and between communities:

1. Interaction with land use:
 - Provide for mixed-use communities that will reduce travel distances to help minimise safety risks when people travel to access services, facilities and social networks.
 - Consider different mix of road users and their specific needs in different types of developments, e.g. strip shopping centres, residential neighbourhoods.
 - Provide connected, attractive and pleasant public spaces to encourage people to walk and cycle for short trips away from roads.
 - Promote subdivisions and local development patterns that contribute to a safe low-speed interaction between all road users. This promotes liveable communities and reduces the road footprint.
 - Limit the number of access points onto roads with speeds higher than 60km/h.
 - Require road safety audits for all scales of land development proposals. Ensure that the audits consider Safe System principles and interaction with the broader road network.
 - Develop planning scheme objectives and acceptable outcomes aligned with the Safe Systems principles to promote safe road environments for pedestrians, cyclists, public transport, and commercial and private vehicles.
2. Different road users:
 - Where possible, design spaces such that vehicular traffic is separated from pedestrian and bicycle traffic, and maximise this separation in high-speed areas. In addition,

separation of pedestrians from bicycle traffic is desirable where possible, particularly in area of high bicycle traffic. This minimises exposure of vulnerable road users to road safety risks.

- Consider pedestrian and cyclist desire lines as well as visibility and locate crossings where road safety risks are minimised.
- Where road use is mixed, design roads to encourage low speeds. Traffic speeds below 40km/h, preferably 30km/h, are desirable in areas of high pedestrian and cycling activity. Road design and landscaping features can be used to encourage lower speeds.
- Incorporate convenient public transport options to reach new developments, e.g. bus stop, train station, given public transport is safer than travelling by car, bicycle, or motorcycle.

3. Road infrastructure:

- Establish and communicate a clear hierarchy with functional transport routes, e.g. link (arterial) roads, collector road, and local access roads. 'Self-explaining' roads help users understand different kinds of road environment, what speeds are appropriate for different kinds of roads, and which transport mode have priority within each route. This clarity promotes safer behaviour and fosters more liveable communities.
- Advocate for a high level of safety features and planners work with designers and engineers to ensure speed management and speed limit decisions reflect the function and use of spaces, e.g. lower speeds in built-up environments may improve safety of, and encourage, active travel modes while separation of conflicting flows and movements can help improve safety on high speed roads (>60km/h) such as link roads or arterials. Appropriate speed management limits the chance and severity of crashes.
- Limit intersection through speed to 50km/h, e.g. through the use of roundabouts to reduce the number of conflict points and the severity of collisions, taking due cognisance of vulnerable road users such as pedestrians and cyclists.
- Avoid visual and roadside clutter to improve visual amenity and minimise roadside hazards such as power poles, trees and street furniture that can kill and maim errant drivers and riders.
- Choose appropriate tree species by considering the mature height in relation to sightlines and trunks that are flexible on impact (no greater than 100mm dia. at full maturity).
- Plan of emergency service access, safe stopping and pull-over areas where applicable to minimise vehicle conflict points.

4. Planning ahead:

- Understand and plan for new safety technologies and road-vehicle communication systems.
- Plan and promote future public transport developments to encourage modal shift.
- Set aside road space for future transport needs to accommodate the safety requirements for multiple modes and increasing traffic demands.

Sustainability - a sustainable transport system is able to be sustained on an economic, social and environmental basis.

Appendix 5: Shaping our Future Terms of Reference

Visit www.shapingourfuture.org.nz



Shaping our Future Executive: Anita Golden
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Transport Task Force

Scope: Land, air and water transport to, from and within the Queenstown Lakes District.
Future focus e.g. 30-50years

Goals:

1. To lead a community discussion on the long term future of Transport in the Queenstown Lakes District.
2. Identify key objectives and priorities.
3. To prepare a draft Transport Strategy paper for community discussion through public forum.

Considerations:

- Consider Shaping our Future Vision and Priorities
- Consider forum information, current baseline and undertake gap analysis
- Consider consultation with other groups or bodies to inform the final report
- Consider previous and current transport strategies (including the current QLDC strategy) and their relevance to today and the future.

Deliverables:

1. Preparation of a draft Transport Future Strategy Paper.
 - a. This paper shall include, but is not limited to:
 - i. Current Queenstown Lakes District situation (base analysis)
 - ii. Historic information (where relevant)
 - iii. Current objectives, priorities and constraints facing the community
 - iv. Analysis, Potential solutions, favoured outcomes and recommendations for the community in the long term.
 - v. Focus on what the district will look like in 30+ years. What will be the success factors and ideal transport situation?
 - b. SWOT analysis of transport, present and future (this part may only inform the final report and be included in the appendix)
 - c. Critical Success Factors and related measures for Transport.
 - i. In context of supporting the Shaping our Future Vision and Priorities
 - ii. In context of Transport forum priorities
 - d. Recommendations to specific agencies to enable the vision to be achieved.
Recommendations to be SMART (specific, measurable, assignable, realistic, time-related)

Scope / Jurisdiction of the Transport Task Force:

- Transport Task Force reports to the Shaping our Future Steering Group.
- Clarification of the terms of reference to be referred to the SoF Steering Group.

- Public comments or press releases made only after consideration and approval of SoF Steering Group.

Task Force Group Facilitation:

- Task Force is supported by Anita Golden, executive at Shaping our Future.
- The Chairperson is Steve Schikker

Governance:

Using Shaping our Future's model of consensus decision making, the task force will seek to make its decisions and recommendations based on the consensus of its participants.

Should the task force group wish to appoint more members, or sub groups, they are to be discussed with the SoF Steering Group.

Timelines:

- First meeting of the Transport Task Force on 2 September in Wanaka, Presbyterian Church Centre.
- Followed by at least monthly meetings from September to February (approx). Dates and venues to be set at the first meeting (TBC).
- Terms of Reference and deliverables to be agreed by second meeting.
- Present first draft of Strategy paper to SoF Steering Group by February 2016 (TBC)
- Refinement of Strategy paper between task force and Steering Group
- Present Strategy paper for feedback to the Queenstown Lakes District community Q1 2016
- Refinement of Strategy paper based on forum feedback (TBA)
- Ratification of Strategy paper and action plan by Steering Group (TBA)
- Submission of Strategy paper and SMART recommendations to appropriate agencies (TBA)

DRAFT SHAPING OUR FUTURE VISION FOR THE DISTRICT

“Spectacular environments, enterprising people, exceptional solutions”

Individuals and groups committed to finding creative ways to build better lives, for now and for generations to come. A district embracing the concepts of Kaitiakitanga and Manaakitanga. KAITIAKITANGA means guardianship, care and protection. It includes the management of natural, cultural, and built environment resources for current and future generations. MANAAKITANGA implies a reciprocal responsibility upon a host, and an invitation to a visitor to experience the best we have to offer. Applying these values reflects our intention to move forward together, based on a shared approach.

DRAFT PRIORITIES FOR THE DISTRICT

Preserve and enhance the environment

Protection of water, air and landscape. Restoration of native and other ecosystems. Maintain and increase accessibility to wild places

Engagement in Governance

Increase participation, remove barriers, encourage local influence, encourage voices to be heard, comprehensive spatial planning, District Plan to clearly express community vision.

Community Development

Working together, improve: connectedness, neighbourliness, community spirit,

communication. Create facilities to gather, educate & socialise and preserve attractions of living here

Diverse Economy

Strong local economy, affordability, right use of natural resources, events destination, increasing self sufficiency of economy, economic diversification

Education

Innovation centres (sports, arts, business), incubators, lifelong learning, niches

Infrastructure / Facilities

High performance facilities for sports, culture, education, health, care for young and old. Sewerage & water and stormwater

Build Self Sufficiency

Local energy, local food production, land use, building design. Move away from ‘ship in, ship out’ systems.

Connectivity

Internet (broadband), transport, public transport, tracks and tracks

Tourism

Build high value, contributing tourism. Create respectful markets, such as through long stay tourism.

Town Development

Community hubs, sensible response to climate change threats and opportunities, locally sourced energy such as micro generation, warm healthy houses, high environmental standards for development.

History

Value and retain the towns and heritage. Strengthen heritage connections



Public Forum – a forum is held, sometimes in multiple geographic locations in the district with information combined together and maintained as separate parts. The forum is open to all

members of the public and determines the general focus and scope of the topic. It is created in a World Café style and is inclusive of all members of the public.

Task Force – a group is formed of volunteers that are charged with the responsibility of putting together, further researching and consolidating the information on the topic. The task force is made up of interested members of the community and a selection of experts that can offer experience and guidance of the group. They may seek further time and resources to undertake the report. The report is assisted where needed from the Steering Group.

Report Feedback – this may happen between the Task Force and Steering Group or where needed, back to open public forum. This helps for consistency of the reporting.

Report to Agencies – delivered by the Steering Group with a chance for the task force to talk to the report at agency level. The agencies will make decisions about the recommendations and whether or not to implement the report advice.

Re-Assess Performance – upon implementation, the Task Force and where needed the Steering Group, ensure that the implementation of the recommendations is achieved to measurable standards. If required the Forum may be called again by the Steering Group in order to assess any 'new standard' or other changing conditions (adaptable future). This is envisaged as being an 'as required' stage. There is no set period in which a 'new' public forum might be revisited.

Appendix 6: Example of Transport Entities currently operating or being set up (Source Shaping our Future Queenstown Transport Report 2016)

1. **Northland Transport Alliance** is an Alliance as the name suggests, made up of NZTA, Whangarei District, Far North District, Kaipara District and Northland Regional Council into one collaborative unit.
2. **Transport for Greater Manchester** is a Joint Committee made up of the 10 Manchester Districts and takes over from the previous Greater Manchester Integrated Transport Authority and is responsible for the improving transport services and facilities including public transport (Metro) and walking and cycling. They are governed by a committee of 33 members from the ten districts. They have a Transport for Greater Manchester 2040 vision “World class connections that support long-term, sustainable growth and access to opportunity for all”. They are dealing with £1.4b in improvements!
3. **Greater Christchurch Urban Development Strategy Partnership** is a Joint Committee comprising of made up of an independent chair, Christchurch City, Waimakariri District, Selwyn District Council’s and Environment Canterbury, Te Runanga o Ngai Tahu, and participants from the NZ Transport Agency, Canterbury District Health Board, and the Greater Christchurch Group (formerly CERA) from within the Department of the Prime Minister and Cabinet.
4. **Tairāwhiti Roads** is a Joint Venture between the Gisborne District Council and NZ Transport Agency for the delivery of roading maintenance and operations. Tairāwhiti Roads has a General Manager and employs Gisborne District Council and Transport Agency staff – see attached diagrams.
5. Portland, Oregon (USA) **Metro** is governed by an elected president and six councillors who are elected every 4 years and have 1,600 staff “charting a wise course to the future”. They have been successful due to land use and future transport planning arms being close, not something we have here in Queenstown. They also use travel demand management effectively to get the most out of their existing transport network, with good public engagement.
6. **Vancouver 2040** is a Partnership between various Authorities, Councils and Stakeholders.
7. **Auckland Transport** is a Council Controlled Organisation, of Auckland Council and is made up of the eight former local and regional council’s and the former Auckland Regional Transport Authority (they mostly did public transport co-ordination), but does not include State Highways.
8. **Marlborough Roads** is also a Partnership, which is between the Marlborough District Council and NZTA.

Appendix 7: Wanaka Transport Public Forum Notes



Queenstown Forum – Monday 11th May 2015, 83 attendees

Wanaka Forum – Wednesday 13th May 2015, 20 attendees

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Introduction

The aim of this report is to capture the outcomes of the Queenstown and Wanaka Transport forum in a way that can help the Task Force shape its recommendations. It records the community's long term aspirations, their views about current challenges facing transport in the Lakes District, priority issues and issues that need to be addressed in the shorter term.

Describing Future Success

Forum attendees were invited to supply their ideal 'headline' for the Lakes District in 2035. The following themes and ideas were put forward. ** indicates where an idea was described more than once.

Wanaka

- Integrated Transport System Suits All***
- Wanaka least congested town in the world*
- Wanaka leading the way with effective Transport Solutions
- Cycle tourism booms in Wanaka
- Solar flights to Mars from Wanaka Airport
- Ecological Cool Wanaka declares independence from Queenstown
- Nasa balloon launches passenger flights from Wanaka

- Matter transport system perfected in Wanaka
- Kids rides electric horse to school
- NZTA accused of favouring bikes
- Private car ownership lowest in the world
- Jetstar flights at an all time high out of Wanaka Airport
- Crowne Range tunnel celebrates 10yr Anniversary
- Free transport, solar charging free for all
- Aucklanders say – not fair, Wanaka pays too little at the pump
- Transport museum displays last private car
- NZTA recognises Wanaka’s safety record
- Wanaka kids ride safely to school

Everyone attending the forum gave one word that described success. These were compiled into a wordle:

Wanaka:



What are the big issues for Transport in the Lakes District

Attendees were asked to discuss in their groups the big issues for Transport in the region. They then voted to assess the highest priorities/importance. These issues were then workshopped in the next session.

Wanaka Big Issues and Priorities:

Theme	Issue/Description	Score
Cultural Change	<p>Locals – challenge of changing habit and culture e.g. to get into the car and do the school run. You could provide the best free public transport but people still wouldn't use it. It has to be sold/psychology of using public transport. Our lifestyles have been created around a habit of driving e.g.. Your timetable for the day only allows 10min for driving to a location rather than allowing 30min to bike. E.g. Europe where it is not an option to drive.</p> <ul style="list-style-type: none"> • Lack of incentives for shared or electric vehicles. • Roads aren't bike friendly or safe for scooters etc 	45
Strategic Planning	<p>Strategic Planning for the future and an integrated master plan. E.g. car, parking, cycleways, public transport, special events</p> <ul style="list-style-type: none"> - It seems presently to be ad hoc planning and development - Electric cars/bikes <p>Need to plan for growth now. Currently not recognised as an issue by many in Wanaka but good planning now will mean no problems in the future. Purchasing of land for transportation, truck bypass, safe walking and cycling tracks</p> <ul style="list-style-type: none"> • Fragmented centres with planning car centric and centred around cars. • Insufficient walkway/alt routes – e.g. commuter trails • Lack of dedicated parking for campervans etc. 	38
Road Safety	Road safety for all including elderly, tourists, cyclists and pedestrians. Children should be able to cycle to school safely.	8
Fossil Fuels	Peak Oil reliance currently	6
Funding	Commercial vs community. Who pays for transport infrastructure? Should it be user pays e.g. parking, taxes, visitors? Is Queenstown spending all the budget? Low population density means public transport uneconomic.	6
Environmental	Keeping the 'jewels' of Wanaka intact e.g. Pembroke Park, Lake and foreshore, local vistas	3
	Pollution from cars, trucks, planes etc	2
Tourism	Lack of support for tourists, need for more communication on expectations, options for tourist travelling through the area. Air transport. Education for o'seas drivers.	2

Carcentricity	Potentially the need for incentives for alternative transport, provision for cycleways, planning of walkways for 'commuters'	1
Accessibility	Potential risk to Wanaka with only two main arterial routes and the airport. Access to Wanaka CBD, lake, must keep the 'jewels'. Access to transport options for youth, unfit, elderly etc.	1
Population density	Relatively low density and remote with dispersed population puts pressure on transport infrastructure esp funding	1

Wanaka participants also provided one word to describe the greatest challenge currently facing the area. These words were put into a wordle:



Outcomes and Solutions

Attendees were then asked to group according to their area of interest based on the priorities they had voted on. The groups were asked to look at their priority and identify the issue, critical driving influences, ideal future outcomes and potential solutions/next steps.

Priority	Issue	Critical Driving Forces	Ideal Outcomes	Potential Solutions
Planning for the Future		<ul style="list-style-type: none"> Population growth, technology, cost, demographic change. Locals/Community/Visitors/Tourists, Local Govt, Regional Govt, National Govt, NZTA Developers Public Transport 	<ul style="list-style-type: none"> Vibrant Community Sustained Low cost/low emission accessibility Managed traffic growth Balance Multi modal transport choice, affordable public transport Electric vehicle infrastructure Biodiesel infrastructure Alternative energy available. Measures – Happiness factor Bonded councillors No. of car parks per ratepayer Never more than 400m from public transport – decreasing over time Wanaka leading not following People understand Emissions 20% of today's – May 2015 Decrease of \$ per household per week spent Commuter flows from Cromwell/Hawea 	<ul style="list-style-type: none"> Incentivise transport by Education/information Car parking charges Shorter time periods for parking Each new connection has cycle/walk/Public transport Planning – thinking more 50years Transport Hub – park n ride Shared space Better quality decisions made by stakeholders. Potentially buy all house east side of Anderson Road
Cultural Change	Convenient/Habit to drive/ easy choice	<ul style="list-style-type: none"> Too easy to drive Lifestyle based on car use – time poor Cost is irrelevant for some/many 	<ul style="list-style-type: none"> Fly monkeys Children safely walking/cycling to school 	<ul style="list-style-type: none"> Sharing transport via apps Internet shopping and delivery Better bike lanes e.g. Dutch as an example

		<ul style="list-style-type: none"> • Lack of sharing, advantage of car • Lack of communication on car sharing? • Lack of motivation to change 	<ul style="list-style-type: none"> • Diverse choices for transport depending on requirement • More ride sharing, car pooling etc • Automated vehicles/buses/highway driving • Innovative solutions no yet dreamed up • Connections between communities e.g. 3 parks, downtown 	<ul style="list-style-type: none"> • More shared space/cleared areas • Parking hubs, less on road parking • Need to start thinking about 3 parks • Not just one way into town • Provisions/communication of parking for campers • A cost for parking? - council needs return on investment • Skifield responsible for workers parking in town/workers accommodation out of CBD • Parking \$ contribution from businesses who use parks • Seasonal charges for parking • Education and engagement • Branding – non car use for Wanaka
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Queenstown Transport Taskforce Report

“The Queenstown Lakes District has an innovative, functional, integrated, multi-modal and sustainable transport system that supports a thriving, healthy community and enhances the visitor experience”

Final Report February 2017



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Executive Summary

There is no single immediate solution to the current transportation issues within the Wakatipu Basin. By looking long-term we can manage the transport infrastructure into the future and become proactive in developing and supporting transport solutions. Traffic congestion⁶ and its impact on the Wakatipu Basin as a place to live and visit are huge concerns for residents and businesses. Projections for growth in resident population and visitor numbers mean that a bold plan for our future is essential if these concerns are to be addressed successfully.

Queenstown Lakes District is unique in NZ in three main ways:

- The daily population of visitors exceeds the resident population of 30,000 by 60% (48,000 people) on average and 215% (94,500) during peaks⁷.
- Local topography limits the ability to extend/expand current road transport corridors, which constrains accessibility and spreads growth over a wide area.
- The local ratepayer base is inadequate to maintain or extend/expand existing key infrastructure.

The Queenstown Lakes District Council expects the total resident population to reach approximately 150,000 by 2045. Planning must start now on developing an integrated multi-modal approach to transport solutions.

Summary of Key Recommendations

In 2016, multiple agencies and organisations are working on transport solutions, focused on their particular area of responsibility. The recommendations included in this report need strong leadership and a co-ordinated, multi-agency/organisation, district-wide, long term approach.

1. QLDC to lead the establishment of a single Transport Entity made up of the primary transport infrastructure providers (QLDC, NZTA and ORC) to oversee the planning, funding and implementation of future improvements to the transport system within the Queenstown Lakes District. The Transport Entity is designed to cut through the various bureaucracies to ensure timely action towards the vision outlined.

The entity will require the necessary independence, authority, expertise, funding and accountability towards achieving a long-term desirable outcome for the district.

Examples of clear governance structures with high level expertise leading a long-term strategy for their regions⁸ include [Vancouver 2040, Marlborough Roads and Auckland Transport](#). See [Appendix 1](#) for more examples of governance and entity structures. See also Diagram 1, pg. 10.

The Transport Entity will work closely and collaboratively with other key stakeholders including (but not limited to) Queenstown Trails Trust, Queenstown Airport Corporation, DOC, Ministry of Education, SDHB, Regional Tourism Offices, Chambers of Commerce, Downtown QT, Public Transport providers, community groups and developers (as required).

⁶ See Glossary for definition of terms

⁷ QLDC Martin Jenkins Economic Development Report 2014

2. The Transport Entity to implement the following summarised recommendations. The recommendations cross multiple agencies. The Transport Entity should be a vehicle for the combination of resources and establishment of co-ordinated long-term goals and planning (further details included in the Recommendations section pg. 8).
- a. Integrated Strategic Planning – future development, creative transport solutions, efficient connectivity and allowing for mixed land use to enable residents to live, work and access recreation in their community.
 - b. Spatial planning that shall include clean, convenient, safe⁹ and accessible solutions in all plans for future urban and rural development, including mixed-use zones and densification within existing urban boundaries.
 - c. Mandate for the Transport Entity to take a leadership role in the use of new technology and provision of a proactive, efficient and flexible transport system that embraces change in order to find the best solutions.
 - d. Development of an integrated district wide long-term transport strategy that provides for transport within and between Frankton, the Queenstown CBD, and the Wakatipu Basin's major residential areas, as well as catering to commuters from the wider Central Otago Region, e.g. Wanaka, Cromwell, Alexandra, Glenorchy, and Kingston. The plan to include but not limited to:
 - i. A Master Plan for the Wakatipu basin area following the principles of recommendations 1 and 2, identifying key public transport, walking and cycling corridors within and connecting to the Frankton Flats area
 - ii. Identification, protection and development of key public transport corridors and transport hubs needed now and into the future¹⁰.
 - iii. A fundamental transformation from the use of private/rental cars and campervans to public transport and innovative forms of transport, e.g. automated shared vehicles, e-bikes, water taxis, gondolas, monorail, etc.
 - iv. Provision of safe and efficient commuter cycling and walking corridors between key destinations and major residential areas, linking with the trails network in the Wakatipu basin.
 - e. The Queenstown CBD should be progressively pedestrianised, any new town centres should be pedestrian friendly.
 - f. Explore and secure collective sources of additional funding, e.g. visitor levy, congestion charging, central government funding to help provide transport (and other) infrastructure.
 - g. Shaping our Future Steering Group to present the Transport Report to the Minister of Transport.

⁹ Safe Systems Approach – see Glossary for definition of terms

¹⁰ The taskforce noted a new paper road along Queenstown Hill to Queenstown Central above the housing line as an example.

Introduction

In May 2015 Shaping our Future held public forums in Wanaka and Queenstown on transportation for the Queenstown Lakes District. A total of 103 people attended, 83 in Queenstown and 20 in Wanaka. Taskforces were established in Wanaka and Queenstown in July 2015. Shaping our Future provided Terms of Reference for the Taskforce (Appendix 2).

A second public forum was held in November 2016 to discuss the draft report. Over 90 people participated at the forum or online. The feedback received had been incorporated into the final report. Overall the recommendations and vision were agreed to by our community.

The Transport Taskforce is made up of volunteers from a broad range of local industry representatives and residents who desire to see the transport network within Queenstown become sustainable over the next 30 years. Wanaka, although it has its own Transport Taskforce, has actively worked with Queenstown's Transport Taskforce in preparing this report for the community.

The Taskforce appreciate that transport solutions cannot be dealt with in isolation. Transport is an integral and interdependent component of overall spatial planning as our community contemplates its vision of the future and the steps necessary to bring the vision to reality.

Scope

- The Queenstown forum reviewed transport in the Wakatipu Basin. This report applies to transport within the Wakatipu basin, Glenorchy, Arrowtown and Kingston.
- Many aspects of this report are relevant to Wanaka as they face similar issues.
- The taskforce focused on four main areas identified at the public forum - Integrated Spatial Planning, Public Transport, Community Culture and Funding.
- Each of these sub groups also looked at the impact of funding and the environment on transport challenges and solutions.
- Air and water transport were considered in terms of traffic flows, public transportation and accessibility as part of overall transport solutions.

Overview

The key objective of the Transport forum was to prepare a report and recommendations embracing: -

- Accessible and affordable public transport options that meet the needs of visitors and residents.
- Improved spatial planning, allowing for better connectivity and accessibility and reducing the need for private vehicle trips.
- A long-term plan for the Wakatipu basin that can support continued tourism, diversification of the economy and population growth.
- An innovative, functional, safe, attractive, affordable and sustainable transport network.
- Provision of more opportunities for alternatives to the private vehicle, such as by water, walking and cycling (spatial planning and connectivity).
- Greater use of existing, emerging and future technologies, e.g. video conferencing to save travel, supporting mobile workforces, automated vehicles, ridesharing, e-bikes etc.

To achieve the desired outcomes for the Wakatipu basin this report includes a long-term vision and recommendations to achieving that vision. The report has been developed on the basis of the information gathered at public forum.

Queenstown Lakes Transport Current Challenges

During the public forums the Queenstown community were asked to provide one word that described the biggest challenge currently facing the district and one word to describe a successful outcome for transport. The results have been used to help guide this report. The full forum results are available in the appendix.

One word as expressed in a Wordle that best described the challenges currently facing the area: -



The clear challenge for the Queenstown Lakes District from the Shaping Our Future public forums is traffic **congestion**. Ignoring the bias in the wordle created by the Kawarau Falls Bridge issue at the time of the forum, the next biggest challenges are **cars** and traffic **growth**, which are the primary causes of congestion.

To achieve the Transport vision, we need to understand the key current challenges. They can be summarised in the following bullets: -

- Traffic congestion
- Reliance on private vehicles for getting around
- Growing conflicts between cars, pedestrians and, to a lesser extent, cyclists
- Poorly integrated land use planning decisions and transport infrastructure
- Cumulative impacts of growth and development on the transport network are not monitored or understood.
- Rate of growth and development and decisions and timing of transport needs
- Flow of traffic into the district
- Environmental sustainability
- Changing our community culture
- Funding for our transport network

Further information on challenges and baseline analysis on the current situation in 2015/16 are available in Appendices 2 and 3.

What do we want for the Queenstown Lakes District?

One word in Wordle form that best described future success: -



The Shaping Our Future public forums' view of **success** is clearly **public transport**. At the time of the Queenstown forum the new Kawarau Bridge location was a topical issue. The forum clearly showed **connectivity**, **choices** and **investment** as desired outcomes.

Improvements in **public transport** are clearly seen by the local/resident public as the solution to congestion in the area, and this is closely associated with **choices** as an alternative to car travel, e.g. public transport, walking and cycling and water.

Connectivity, or access to where we want to go, is related to good spatial planning. Good spatial planning provides more opportunities for **choices**, e.g. walking and cycling, public transport or for those who need to use private cars the infrastructure to be able to do so, parking etc.

Investment is likely the result of the lag in transport infrastructure improvements that will relieve some of the peak congestion that is currently being experienced.

Vision for 2046 – Queenstown Transport

“The Queenstown Lakes District has an innovative, functional, integrated, multi-modal and sustainable transport system that supports a thriving, healthy community and enhances the visitor experience”

This vision has been developed for the Wakatipu basin and encompasses the following elements: -

Innovative:

- A transport system that embraces new technology and processes.
- Looks towards early adopter cities around the world for transport solutions that are proving successful.
- Wherever possible, discards technologies and concepts that become outdated and no longer best practice.

Functional:

- A transport system that meets the needs of residents and visitors and provides an acceptable level of service.
- Paved commuter cycling routes and end-use facilities (showers and storage) that support and encourage the use of multi-modal transport options.
- Accessible and convenient options and parking for those who need to use private vehicles, e.g. the elderly, families etc.
- A transport system that is integrated with the Safe System¹¹ philosophy.

Integrated and Multi-modal:

- Multi-modal transport system that encourages the use of a range of options for travel including connectivity between public transport (road, air and water) with trails (cycling and walking), end destinations, retail, educational and recreational needs.
- Planning for and implementation of infrastructure for a public transport system that is accessible, affordable and convenient for visitors and residents, e.g. bus priority measures, wharves for lake and river use, disincentives for car use, e.g. parking availability and parking charges, congestion acts as a disincentive.
- An integrated planning and transportation approach that considers the Safe System as a whole.

Sustainable:

- Innovative and clean connectivity solutions to provide better public transport connecting main centres of public and tourist interests in Queenstown.
- Congestion managed through reduced car use by commuters and visitors, planning for sustainable land use and road network improvements.
- Encourage commercial deliveries e.g. supermarket deliveries to make using public transport more convenient.
- Ability to fund transport solutions and ongoing maintenance and operation of the transport system.
- Timely implementation of transport solutions – proactive rather than reactive.

Thriving, healthy community:

¹¹ See Glossary for definition of terms

- A community that embraces the natural environment and actively utilises alternative transport options for everyday life.
- Residents that have the ability to work, recreate and live within their community.

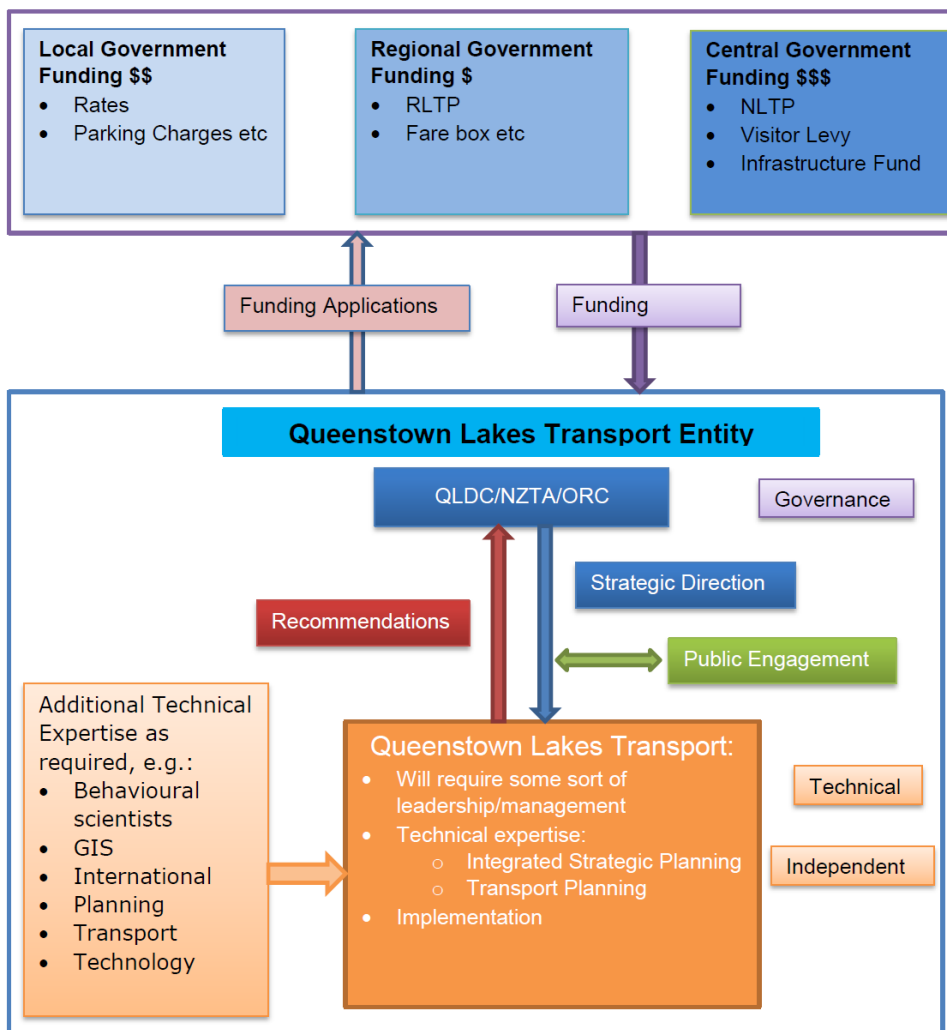
Recommendations

QLDC to lead the establishment of a single Transport Entity made up of the primary transport infrastructure providers (QLDC, NZTA and ORC) to oversee the planning, funding and implementation of future improvements to the transport system within the Queenstown Lakes District. The Transport Entity is designed to cut through the various bureaucracies to ensure timely action towards the vision outlined.

The entity will require the necessary independence, authority, expertise, funding and accountability towards achieving long-term desirable outcomes for the district.

[Vancouver 2040, Marlborough Roads and Auckland Transport](#) are examples of clear governance structures with high level expertise leading a long-term strategy for their regions.¹² An example of how the entity might be structured is included below:

Diagram 1: Example Queenstown Lakes Transport Entity Structure



QLDC and the Transport Entity to work closely and collaboratively with other key stakeholders including (but not limited to) Queenstown Trails Trust, Queenstown Airport Corporation, DOC, Ministry of Education, SDHB, Regional Tourism Offices, Chambers of Commerce, Downtown QT, Public Transport providers, community groups and developers (as required).

QLDC and the Transport Entity will be responsible for further investigation and action on the following recommendations:

Strategic Planning - development of an integrated strategic plan which includes: -

- Integrated Strategic Plan for the Wakatipu basin, with an initial focus on the Frankton Flats as a priority, and long-term transport planning across the district to improve connectivity of trails, public transport, ferry terminals and air access.
- Evaluation of current single use zones and provision of future mixed land use to provide better access and connectivity to reduce the need/distance to travel, e.g. office, commercial and educational space within residential areas.
- Establishing pedestrian friendly zones e.g. pedestrianising Queenstown CBD, Arrowtown Main Street, new town centres designed to be pedestrian friendly.
- Integration of planning (District Plan zoning) and transport (multi-modal) and identification and protection of transport corridors and hubs that provide for future use/connectivity. Including analysis of future key routes into Frankton, pressures on bridges – Edith Cavell, Kawarau River Bridge, Shotover River Bridge, current rural roads that may become high use, e.g. Lower Shotover
- Provision of affordable worker accommodation close to place of employment, e.g. Gorge Road initially but also Frankton.
- Safe Systems approach in planning to achieve a safe transport system that is not inherently unsafe for all users and future generations.
- Scenario planning/sensitivity analysis. Identification of triggers for various growth scenarios to allow for better forward planning, especially for funding.

Research and Analysis - behavioural study of residents and visitors: -

- To better understand what determines people's current travel patterns, i.e. where they are going, why and what influences their travel mode choice and external factors influencing mode use, e.g. cost (fares, petrol price), accessibility, connectivity, congestion, weather, etc.
- Understand visitors' current perceptions of transport in and around the Queenstown Lakes.
- Undertake an analysis of Queenstown growth and transport network (current and future growth) to understand the critical areas of congestion and opportunities to address these via alternative modes.

Public Transport: -

- Identification and development of bus priority measures (or dedicated public transport corridor where possible), initially Frankton – CBD but medium to long term the wider basin, e.g. Lower Shotover, Arrowtown – Queenstown, CBD/Frankton loop, Frankton Flats loop.
- Encourage the use of public transport and connectivity e.g. free public transport days/free public transport, go by bike day, free Wi-Fi, coffees, rewards for using public transport.

- Build high tech educative support that provides real time, useful and relevant information, i.e. Intelligent Transport Systems
- In the short term focus on key routes and markets. Launch and celebrate 1 or 2 key routes, e.g. Airport/Frankton to CBD.
- Long-term focus on visitor perceptions, work with Tourism NZ and Destination Queenstown on messaging about rental vehicles in Queenstown.
- Public transport solutions need to be as/or more convenient, affordable, accessible and timely than private vehicles for residents and visitors to change behaviour.
- Target the people who will be thinking about different transport choices (visitors, seasonal workers) or who have less choices (school children).
- Create public transport hubs that are safe, sheltered and attractive¹³ for both bus and water transport, lead the way in trialling solutions e.g. 'pop- up' park n ride facilities.

Cycling / Walking: -

- Provide a framework of direct, clearly signed and safe¹⁴ commuter cycling facilities on main routes between key destinations, main residential areas and the Queenstown trails network.
- Provide end-of-trip facilities (secure parking/storage, toilets, showers and charging facilities).
- Seek subsidised funding to support commuter facility development.

Parking: -

- Manage parking, and provide new parking facilities, for cars and bikes (including park and ride) that complement and support public transport use.
- Development of off-street parking facilities for residents and visitors that reduce the need for traffic to enter and circulate around the town centre or for visitors to need a vehicle in the Wakatipu basin.
- Provision of an integrated parking management system that directs traffic to the available parking facilities, e.g. apps showing parking availability.
- Progressive reduction in availability of on-street parking to reallocate road space for better use, e.g. walking & cycling.

Community Culture: -

- Build community and visitor awareness of existing public transport services, walking and cycling routes and also of our commitment to delivering an efficient, reliable service that doesn't rely on fare box takings (i.e. subsidised and inexpensive - gold coin).
- Promote Public Transport sub links to get people to the main 'transport hubs'.
- Master plan to improve connectivity of commuter trails, bus stops and ferry stops.
- Plan for and encourage new innovative and emerging ideas - e.g. carpark sharing (like air bnb for carparks), yourdrive.co.nz, carpooling, hitchhiking apps, temporary trials of transport solutions.

¹³ CPTED - Crime Prevention Through Environmental Design

¹⁴ Safe – includes separation/barriers where necessary from cars/buses and takes into account new and emerging technologies, e.g. hoverboard - type technology, segways.

- Engage the community in developing solutions and alternatives, provide incentives for change, e.g. car free days, free or subsidised public transport, subsidise taxis for pensioners.

Funding: -

- Investigate funding solutions for public transport, e.g. subsidies, parking fees pool, visitor levy, congestion charging.
- Co-ordination of projects to ensure best use of available infrastructure funding.
- Develop an alternative integrated funding model that recognises the limitations of the district's ability to provide its local share for co-funded local road improvements.
- Investigate opportunities for wider use of third party funding agreements where there are significant benefits to developers for the provision of lead transport infrastructure.

Overall Baseline Analysis (current situation)

In developing this report, the Queenstown Transport taskforce had access to a range of information provided by NZTA, QLDC and interested parties. The transport scenario in 2015/16 is rapidly changing and therefore we acknowledge gaps within our data. To view more of the expanded information, please see Appendix 3. The current baseline situation is summarised below.

Queenstown is unique in NZ in terms of daily population with visitors exceeding the resident population by 60% on average and 215% during peaks, i.e. approx. 30,000 permanent residents equates to 48,000 total people on average and 94,500 total people during peaks. It is therefore difficult for permanent residents to provide for the infrastructure needs of visitors.

Car Travel and Congestion: -

- Between 7-11am (March 2014), over 5000 cars enter the town centre.
- Around 2500 people travel to work in the town centre, and 1600 people travel through the town centre to work.
- People's proximity to the town centre and the size of the resident population influence the numbers of people traveling from different parts of the Wakatipu basin, and from outside the basin, to work in the town centre.
- Central Queenstown has high proportions of people arriving by bike, and on foot, while car travel accounts for almost all work trips from other areas.
- Traffic around the Frankton area has experienced significant growth with the area northeast of Frankton Junction experiencing traffic growth of up to 12% during 2016, and an average daily growth of 11% in 2015, on top of 7% in 2014. Average annual traffic growth for the five-year period to 2011-2015 has been 29%, an average annual growth of approximately 6%. The national average is 0-2%. Five Mile, Mitre 10 Mega and further planned retail and residential developments will put further pressure on this area.
- At the end of 2015 traffic on SH6 in Frankton was an average of 20,000 vehicles per day, this had grown to an average of 24,000 in early 2016 with a peak of 28,500 vehicles.

- People's travel patterns in and around Queenstown are not well understood and especially the changes in daily travel patterns, e.g. weather and ski field conditions, which are unique to New Zealand.

Parking: -

- Approximately 1000 cars park all day in the town centre and periphery.
- Approximately 80% of the 458 on-street short stay parks (within the town centre) are occupied during the day.
- Most on and off-street parking is 80% occupied during the day, including Man Street carpark.
- QLDC on-street parking survey in the mid 2000's showed greater than 100% usage, i.e. people leaving parks before parking charge had expired.

Visitors: -

- Traffic volumes are seasonal - they are highest in the winter pm peak and, coinciding with the ski season and mid-summer and lowest in the visitor shoulder seasons (April & May and October & November).
- Visitor surveys indicate 40-50% of visitors arrive in Queenstown Lakes District by air and growing.

School travel: -

- Around 1300 students travel to schools on the town centre periphery. Wakatipu High School is moving to Frankton Flats in 2018, which will change traffic flows.
- The schools do not have residential areas within close walking and cycling distance.
- Most children travel to school by car or bus (over 80% at St Josephs, Remarkables Park and Queenstown Primary). Shotover Country and Arrowtown Primary have higher rates of walking and cycling which can be attributed to proximity and safe routes for getting to school. 2015/16 schools survey is available in the appendix.

Public Transport: -

- The Wakatipu Basin currently has a public bus transport option, which is poorly utilised by residents with timing, reliability, cost and convenience affecting numbers. Queenstown Water Taxis provide a taxi service taking in Kelvin Heights and Frankton to town. This service is mostly used by visitors.

Integrated Strategic Planning

Vision

“The Queenstown Lakes District is a leader in spatial planning achieving functional, attractive and sustainable transport solutions that allow for future urban living and increased population density. A plan that provides for mixed land use, and integrates alternative modes of transport.”

Definition of Integrated Strategic Planning: Town Planning, Urban Design/Planning, Integrated Planning, Spatial Planning – the integration of landscape architecture, architecture, civil engineering (roads, sewer, water supply, storm water and communications systems), and public administration within a technical and political process concerned with the use of land, protection of the environment and public welfare for the process of designing and shaping cities, towns and villages with the goal of making urban areas functional, connected, attractive and sustainable.

Current Situation (Baseline Analysis): -

The Resource Management Act (RMA) 1991 is currently¹⁵ before parliament for reform. The reform proposal still has a gap between strategic planning and infrastructure planning. The Queenstown Lakes proposed District Plan (10 yr. review) Part 1 was released for public consultation in 2015. The goal of the review includes trying to address high growth projections, pressure on transport and roading networks, tourism growth, high demand on services, and a lack of or poor quality housing.

The Plan also relates to the *strategic and integrated management of urban growth*. The objective is to *ensure urban development occurs in a logical manner*:

- *To promote a compact, well designed and integrated urban form, managing the form of urban development within existing Urban Growth Boundaries ensuring:*
 - *Connectivity and integration with existing urban development;*
 - *Sustainable provision of Council infrastructure; and*
 - *Facilitation of an efficient transport network, with particular regard to integration with public and active transport systems.*
- *To manage the cost of Council infrastructure; and*
- *To protect the District's rural landscapes from sporadic and sprawling growth.*

There have also recently been amendments to the Local Government Amendment Act 2012 that has refocused local government (Councils) back to their core business (including infrastructure) and greater efficiency. The Amendment Act 2012 has a requirement for Councils to provide a long-term, 30-year plan for infrastructure, and more focus on spatial planning.

This has been followed up by the Local Government Act 2002 Amendment Bill (No 2), currently¹⁶ before Parliament, which looks to improve Council's service delivery and infrastructure provision arrangements.

¹⁵ 2015

¹⁶ 2016

For more information, see Appendix 4.

Integrated Strategic Planning

What success looks like

- Good spatial planning through mixed land use that takes into account form, function, connectivity/accessibility, transport and other infrastructure (sewer, water supply and storm water), that requires less reliance on private vehicle use with provision for the elderly and families with young children.
- Strategic Planning that is:
 - Flexible to future changes, allowing for multiple outcomes and adaptability.
 - Pedestrian friendly
 - Safe and follows the Safe System principles.
 - Has established transport hubs
 - Encourages shared work and living space, e.g. mixed use (integrated planning)
 - Encourages early adoption of new and emerging technologies e.g. self-drive cars, electric/hydrogen powered vehicles
- Integrated planning, lead by QLDC in collaboration with multiple agencies, e.g. Queenstown Airport Corporation, NZ Transport Agency, Ministry of Education, developers, Ngai Tahu, ski field operators, Central Government.
- An efficient transport system i.e. inefficiencies in existing road networks will be utilised.

Potential issues in delivering the vision

The gap with today

- Historic and current land use planning/zoning has had little integration, with transport coming as a secondary consideration.
- Reliance on private car use and low percentage use of public transport and walking and cycling for transport.
- Poorly integrated planning:
 - Between land use zoning and transport needs,
 - Mixed land use,
 - Access and connectivity,
 - Looking at the wider network and accumulative effect of independent development, and
 - Between various agencies and stakeholders - requires partnership.

KPI's

- District Plan/Resource Management Act process - resource consents and cumulative consequences, appeals and Environment Court (e.g. Frankton Flats), e.g. the District Plan is not fixed and is open to change through the subjective Resource Consent process
- Existing (and proposed) District Plan zoning.
- Willingness of people to change habits, e.g. modal shift.
- Balancing options of cycling/walking with those that need to use private transport.
- Timeframe to achieve change.
- Lack of coordination between agencies and stakeholders (partners).
- Funding.
- The right people resource to drive/implement integrated strategic planning.
- Inaction/implementation

- Travel time reliability, i.e. travel times consistent at the same time each day
- Decreasing unit of travel distance, i.e. people needing to travel less distance to work, live and play.
- Reduced vehicle traffic and an increase in pedestrianisation of the CBD areas.
- Reduced pollution (air and noise).
- Rezoning of current single land use zones for mixed use, e.g. Jacks Point/Hanley Downs to include study/shops.
- Cycling and walking tracks linking major hubs of home/work/study.

Public Transport

Vision:

“Our public transport system is the transport mode of choice for ourselves and our visitors alike. It’s as much a part of the “Queenstown experience” as the Remarkables and Lake Wakatipu. It matches our lifestyles; responding to our changing needs while providing effective, modern transport solutions that we can rely on, at a cost that we can afford.”

Current Situation (Baseline Analysis)

Traffic congestion and the impact this has on the Wakatipu Basin as a place to live and visit are huge concerns for residents and businesses. Projections for growth in resident population and visitor numbers mean that a bold plan for our future is necessary if these concerns are to be addressed successfully.

What success looks like	The gap with today
<ul style="list-style-type: none">● Queenstown has a safe, affordable, reliable and efficient public transport on key routes that services visitors and local residents travelling to key destinations.● Our destinations and suburbs don't rely on cars:<ul style="list-style-type: none">● Pedestrianised retail areas and town centre streets● Major outer public transport stops that are integrated with other modes.● Served by commuter cycling and walking networks to homes● Park'n'ride provided for people that have to drive● Home and work locations with easy access to public transport.● Public transport is convenient and affordable.● Land is secured for future corridors, wharves, park'n'ride and hubs.	<ul style="list-style-type: none">● Private car use is the preferred method of transport.● Car parking is affordable and convenient, especially in the CBD.● Lack of connectivity between PT options e.g. buses/water taxis/walking and cycling tracks.● No central hubs for PT options e.g. park n ride, central exchange for transport with parking available for cars, bikes etc.● Public transport is not considered affordable or convenient.● Lack of reliability due to changes in traffic flows during the day.● Limitations in routes and times so public transport doesn't serve the population working early in the morning or late at night.● Public transport options limited for certain sectors e.g. provision for bikes or buggies. Connectivity between schools/events centre etc.

- Public Transport has priority over cars to allow for reliable and quick services
- Public Transport is considered more convenient than private car due to car parking availability/affordability.
- Queenstown adopts technological advances and provides the facilities to encourage alternative transport modes e.g. electric transport/self-drive cars.
- Innovative, high tech information delivery through apps and bus stop signage

Potential issues in delivering the vision

- Culture of private vehicle use by both visitors (Tourism NZ promotes NZ as a touring destination) and residents.
- Visitors to the region are often travelling by car around the country.
- Securing/funding of land for use as a park n ride.
- Funding for enhanced public transport options.
- Space/land available for a key transport corridor between Frankton and Queenstown and around the basin.
- Balancing the needs of residents with visitors.
- Agencies working in isolation without consideration for a truly multi-modal approach e.g. NZTA, QLDC, Trails Trust, Water Taxis, bus providers

KPI's

- Increased use of public transport, walking and cycling.
- Public transport patronage on selected routes exceeds the use of the privately owned vehicles
- Awareness of Queenstown's high quality public transport is positive and high amongst those who don't live in the district but are planning to visit
- Satisfaction with the quality of public transport amongst those who live in the district (both users and non-users of public transport) is high

Community Culture

Vision:

“A Community cultural shift has occurred that accepts the need for communally based multi model transport. Housing density has increased and transport hubs and services are safe, efficient, socially desirable and integrated into day to day life.”

Current Situation (Baseline Analysis)

- The Queenstown Basin (and NZ) is set up for the private vehicle.
- Culturally individuals dislike leaving cars behind and dislike the current bus system.
- Necessity isn't yet great enough to push the change for alternatives to the private car.
- Network not extensive enough for people to make change. Our network is unsafe for pedestrians and cyclists of all ages and it doesn't have the appropriate journey end facilities.
- Development still focused on greenfields and large sections.

What success looks like

The gap with today

- A community actively engaged in utilising public transport and alternative modes of transport e.g. cycling and walking, subsidized taxis for the elderly, ill or those with small children.
- Community views public transport as the preferred mode of travel to/from key destinations/homes/work/recreation
- The community adopts and embraces new and emerging e.g. car pooling apps, Yourdrive.co.nz
- Multi modal transport is safe and fit for purpose - good connections, good tracks (heavy usage bike and pedestrian commuter tracks need to be divided and sealed)
- Visitors to Queenstown are well informed and choose public transport as their preferred method of travel.
- The community advocates for and supports subsidization of the public transport system.
- Local businesses support alternative work practices – working from home/business hubs/ flexi time, reducing the need to travel.
- A healthy- thriving community that is active and engaged.

- Public Transport – viewed as expensive and lack of connectivity between places people want to get to at the right time.
- Trails are not expansive enough to connect.
- Lack of facilities along main/commuter trails and at end destinations.
- Lake not viewed as a viable/convenient transport option.
- Conditions of trails is not always fit for purpose e.g. accommodating cycling and pedestrian, commuter friendly.
- Safety – difficulties crossing roads/roundabouts
- Urban spread – development in outlying areas, residential, commercial and retail means it's difficult to get between where you live, work and play
- Lack of motivation to change, get out of private vehicles.
- Private car viewed as the most convenient way of travel.
- Visitors encouraged and view private vehicles as the most convenient way to travel around the district.
- Lack of community understanding of options available/timings and alternative options.

Potential issues in delivering the vision

- Capital cost
- Public backlash – stalling, lack of motivation to change, understanding that there is a full range of options not just cycling/walking.

KPI's

- High understanding (90%) of public transport services - routes, timetables, stops and services.

- FIT tourism expectations, Tourism NZ policy towards independent travel
- Difficulty connecting networks and communities because of distance between them and favouring of suburban communities
- Need to develop secondary Public Transport links to main hubs

- Cycle/pedestrian routes are well known and used (90% of people know how to get to their places of work and play without using the road).
- 80% of people can find the time of the next bus on their device.
- People are proud of NOT using a car and recommend other modes
- 90% of people believe biking and walking from home to work to recreation is safe.
- 60% of school children ride, walk, scoot or travel on public or school provided transport.

Glossary of Terms as they relate to Transportation

Accessibility¹⁷ - people's overall ability to reach service, activities, and destinations... The quality of accessibility has tremendous direct and indirect impacts.

Several general factors can affect accessibility:

- Motor vehicle travel conditions. Automobile travel speeds, affordability and safety.
- Quality of other modes. Walking, cycling, public transit, telework, delivery services speeds, convenience, comfort, affordability and safety.
- Transport network connectivity. Density of paths and roadway connections, and therefore the directness of travel between destinations, plus the quality of connections between modes, such as the ease of walking and cycling to public transport stations.
- Land use proximity. Development density and mix, and therefore distances between activities.

CPTED¹⁸ - Crime prevention through environmental design (CPTED), is a multi-disciplinary approach to deterring criminal behaviour through environmental design. CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts.

Congestion¹⁹ - **Traffic congestion** is a condition on transport networks that occurs as use increases, and is characterized by slower speeds, longer trip times, and increased vehicular [queueing](#). The most common example is the physical use of roads by vehicles. When traffic demand is great enough that the interaction between vehicles slows the speed of the traffic stream, this results in some congestion.

As demand approaches the capacity of a road (or of the intersections along the road), extreme traffic congestion sets in. When vehicles are fully stopped for periods of time, this is colloquially known as a **traffic jam** or **traffic snarl-up**.

¹⁷ Evaluating Accessibility for Transportation Planning, Measuring People's Ability to Reach Desired Goods and Activities, 23 March 2016, Victoria Transport Policy Institute

¹⁸ Wikipedia

¹⁹ Wikipedia



Congestion is often linked to a Level of Service (LOS). This is the LOS that the transport network provides and is normally rated A-F. The LOS is generally set by the transport authority at a level that society will tolerate.

Connectivity²⁰ - *Connectivity* refers to the density of connections in path or road networks, and the directness of links. A well-connected network has many short links, numerous intersections, and minimal dead-ends. As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations, creating a more [Accessible](#) and [Resilient](#) transport system that reflects [Complete Streets](#) (multi-modal) principles. Connectivity can apply both internally (streets within that area) and externally (connections with arterials and other neighbourhoods).

Functional - designed to be practical, useful and safe for **all** users.

Mobility²¹ - mobility refers to the movement of people or goods. Mobility is how far you can go in a given time, as opposed to accessibility, which is how many useful or valuable things you can do.

Mobility has substitutes such as telecommunications or delivery services.

²⁰ Victoria Transport Policy Institute, Transportation Demand Management Encyclopaedia

²¹ Human Transit, How Clearer Thinking about Public Transit Can Enrich Our Communities and Our Lives, Jarrett Walker

Accessibility, Connectivity and Mobility are often interchanged and have different meanings. They are complementary to each other and conflicting at the same time, e.g. people in NZ have easy access to private motor vehicles, however this easy access to private vehicle sometimes limits access to the places we want to go through resulting congestion.

Safe System Approach²² - in a roading context a Safe System approach has the objective of eliminating deaths and serious injuries to all road users (motorists, motorcyclists, cyclists and pedestrians), through shared responsibility for creating a safe road system. *Good planning and design sets the foundation of a safe road environment*²³.

The Safe System approach to road safety was first adopted by the Netherlands in 1990, Sweden's "Vision Zero" in 1997, and United Nations Tylosand in 2009 and the subsequent 2010 United Nations "Decade of Action for Road Safety 2011 - 2020".

The Safe System Approach is based on a number of principles:

5. **People make mistakes** - Some crashes are unavoidable. The transport system must accommodate these so that when they do occur, they do not result in death or serious injury.
6. **Our bodies are vulnerable** - There are limits to the amount of force our bodies can be subjected to before we are injured. In a Safe System, crash forces are managed such that they do not lead to death or serious injury.
7. **All parts of the system work together to provide a 'forgiving' road transport system** - Aiming to ensure that the forces in collisions do not exceed the limits of human tolerance must be considered when planning, designing and maintaining road, vehicles and speeds. Road users should be alert and compliant when interacting with a road network.
8. **Responsibility for road safety is shared by all** - Those who plan, design and manage the road, as well as road users, share responsibility for road safety.

The Safe System model consists of four pillars around human tolerance to crash forces:

- Safe road (transport) infrastructure - planning and design of roads and transport systems that minimise the risk of crashes occurring, and when crashes to occur, ensure that death or serious injury are minimised.

²² Austroads Research Report AP-R488-15 Safe System in the Planning Process, June 2015.

- Safe speeds - that suit the function and environment of the road, so that crash impact forces are managed within human tolerances impact speeds for different users and types of crashes that are survivable and don't result in death or serious injury.
- Safe vehicles - that incorporate design features and technology that minimise the likelihood of crashes and protect road users (vehicle occupants and other road users, including pedestrians and cyclists), when crashes do occur. Development of vehicle safety, e.g. star ratings.
- Safe road users - should be alert, comply with road rules and engage in safe behaviour. They are supported through education, information, legislation and enforcement relating to road and vehicle use.

New Zealand's *Integrated Planning Strategy* defines integrated planning as:

“...[bringing] land-use planning, and transport planning and investment together, to deliver an affordable transport system that supports a growing economy, safe and vibrant communities and a healthy environment, now and into the future.”

The relationship of the Safe System Approach to planning practices is in dealing with the built form and transport, planners play a pivotal role in influencing the road network, e.g. strategic and statutory planning and both affect land-use decisions, which in turn affects the road and transport network. It follows that land-use planning has direct influence on the transport network, with the potential to influence the design of roads, how the road network is used, and what infrastructure safety investments are required in the future. Planning plays a critical role in providing a Safe System.

Safe System principles in planning to provide healthy, safe and sustainable travel within and between communities:

5. Interaction with land use:

- Provide for mixed-use communities that will reduce travel distances to help minimise safety risks when people travel to access services, facilities and social networks.
- Consider different mix of road users and their specific needs in different types of developments, e.g. strip shopping centres, residential neighbourhoods.
- Provide connected, attractive and pleasant public spaces to encourage people to walk and cycle for short trips away from roads.
- Promote subdivisions and local development patterns that contribute to a safe low-speed interaction between all road users. This promotes liveable communities and reduces the road footprint.
- Limit the number of access points onto roads with speeds higher than 60km/h.
- Require road safety audits for all scales of land development proposals. Ensure that the audits consider Safe System principles and interaction with the broader road network.
- Develop planning scheme objectives and acceptable outcomes aligned with the Safe Systems principles to promote safe road environments for pedestrians, cyclists, public transport, and commercial and private vehicles.

6. Different road users:
 - Where possible, design spaces such that vehicular traffic is separated from pedestrian and bicycle traffic, and maximise this separation in high-speed areas. In addition, separation of pedestrians from bicycle traffic is desirable where possible, particularly in area of high bicycle traffic. This minimises exposure of vulnerable road users to road safety risks.
 - Consider pedestrian and cyclist desire lines as well as visibility and locate crossings where road safety risks are minimised.
 - Where road use is mixed, design roads to encourage low speeds. Traffic speeds below 40km/h, preferably 30km/h, are desirable in areas of high pedestrian and cycling activity. Road design and landscaping features can be used to encourage lower speeds.
 - Incorporate convenient public transport options to reach new developments, e.g. bus stop, train station, given public transport is safer than travelling by car, bicycle, or motorcycle.
7. Road infrastructure:
 - Establish and communicate a clear hierarchy with functional transport routes, e.g. link (arterial) roads, collector road, and local access roads. ‘Self-explaining’ roads help users understand different kinds of road environment, what speeds are appropriate for different kinds of roads, and which transport mode have priority within each route. This clarity promotes safer behaviour and fosters more liveable communities.
 - advocate for a high level of safety features and planners work with designers and engineers to ensure speed management and speed limit decisions reflect the function and use of spaces, e.g. lower speeds in built-up environments may improve safety of, and encourage, active travel modes while separation of conflicting flows and movements can help improve safety on high speed roads (>60km/h) such as link roads or arterials. Appropriate speed management limits the chance and severity of crashes.
 - Limit intersection through speed to 50km/h, e.g. through the use of roundabouts to reduce the number of conflict points and the severity of collisions, taking due cognisance of vulnerable road users such as pedestrians and cyclists.
 - Avoid visual and roadside clutter to improve visual amenity and minimise roadside hazards such as power poles, trees and street furniture that can kill and maim errant drivers and riders.
 - Choose appropriate tree species by considering the mature height in relation to sightlines and trunks that are flexible on impact (no greater than 100mm dia. at full maturity).
 - Plan of emergency service access, safe stopping and pull-over areas where applicable to minimise vehicle conflict points.
8. Planning ahead:
 - Understand and plan for new safety technologies and road-vehicle communication systems.
 - Plan and promote future public transport developments to encourage modal shift.
 - Set aside road space for future transport needs to accommodate the safety requirements for multiple modes and increasing traffic demands.

Sustainability - a sustainable transport system is able to be sustained on an economic, social and environmental basis.

Appendix 9a: Future Thinking Summary Presentation



LAW #1:

“The Future” cannot be “predicted” because “the future” does not exist.

Ref: Dator, Jim *What Futures Studies is, and is not*

LAW #2:

Any useful ideas about the futures should appear to be ridiculous.

Ref: Dator, Jim *What Futures Studies is, and is not*

LAW #3:

Futures are not static nor passive – we shape our futures and thereafter our futures shape us.

Ref: Dator, Jim. *What Futures Studies is, and is not*



**Why engage
in Futures
Thinking?**

Futures Thinking
seeks to discover
alternative futures
not yet identified.

Futures Thinking

What might happen?

What will we do?

How will we do it?

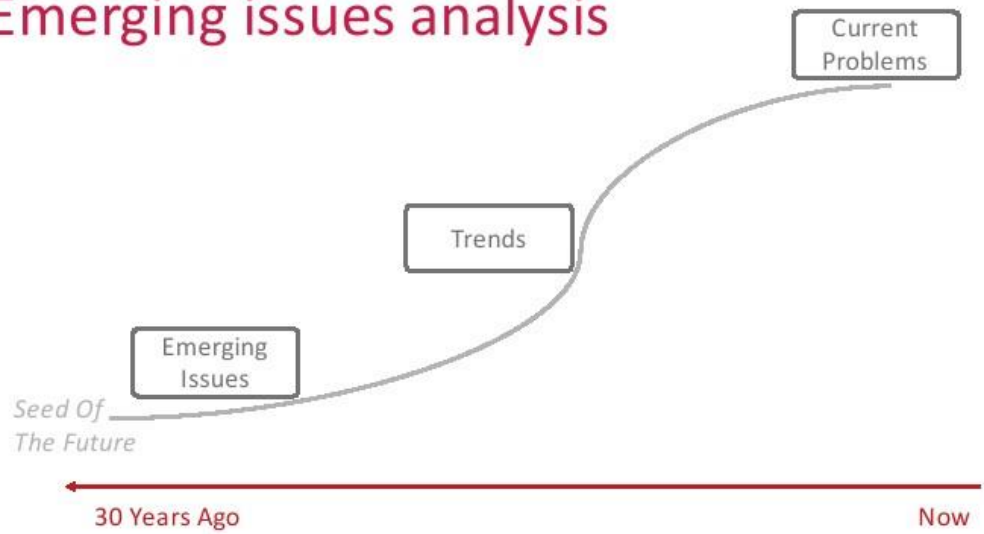


Ref: Conway, Mary. An overview of foresight methodologies

What questions do we ask ...

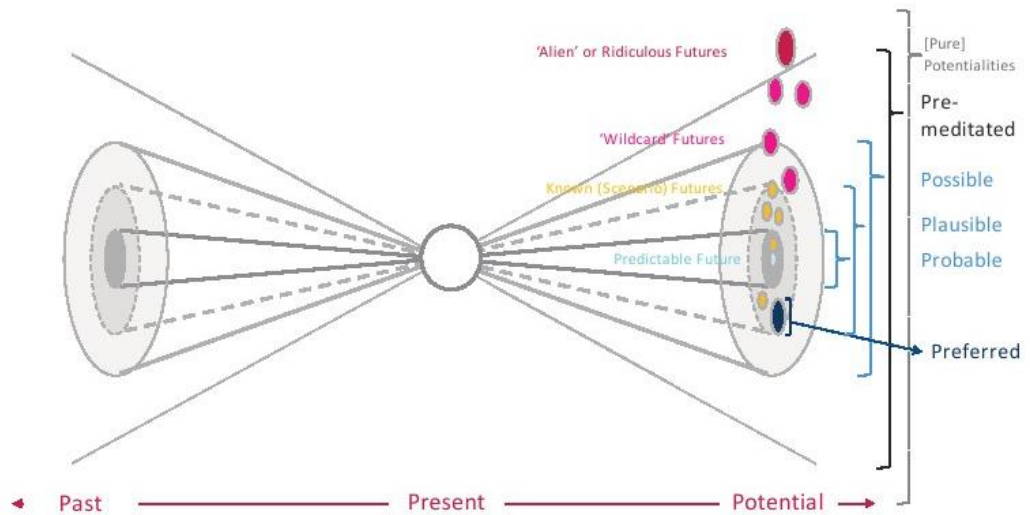
	Past Thinking	Present Thinking	Futures Thinking
Strategic Thinking	<i>What has happened?</i>	<i>What is happening?</i>	<i>What might happen?</i>
Strategic Decision-Making	<i>What did we do?</i>	<i>What are we doing?</i>	<i>What will we do?</i>
Strategic Planning	<i>How did we do it?</i>	<i>How are we doing it?</i>	<i>How will we do it?</i>

Emerging issues analysis



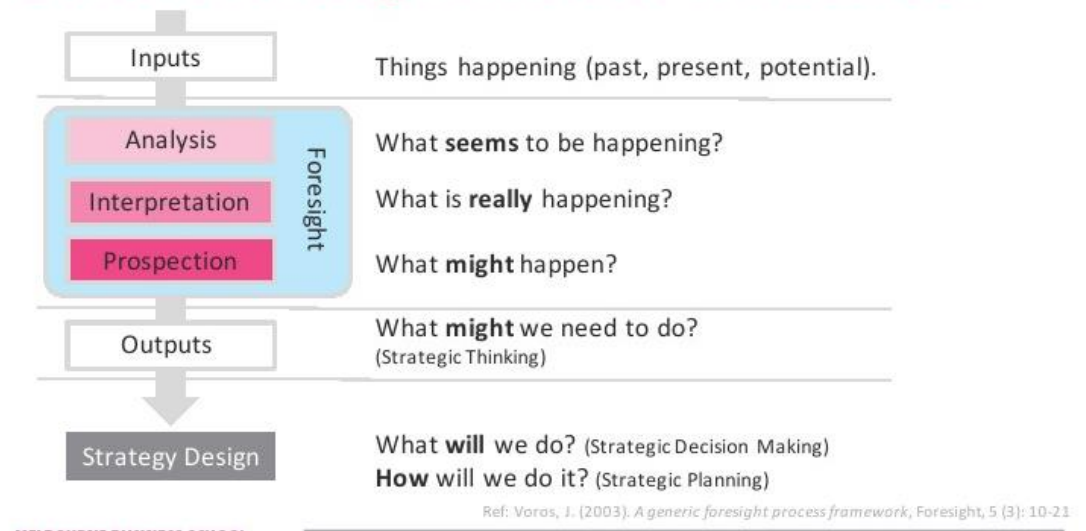
Ref: Molitor, G. (2003). *The power to change the world: The art of forecasting*

The Field & Futures Thinking



Ref: Henchey, N. (1978), 'Making Sense of Futures Studies', *Alternatives*, 7: 24-29

Generic Foresight Process Framework



Presentation Credit: Melbourne Business School and Dr
Amanda Bell

Appendix 9b: A generic foresight process framework

A generic foresight process framework

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Version Date: 12 October 2005

Abstract

A generic foresight process framework is outlined, based upon prior independent work by Mintzberg, Horton and Slaughter. The framework was developed as part of work carried out by the author during the introduction of foresight into the formal strategic planning of a public-sector university in Australia. The framework recognises several distinct phases, leading from the initial gathering of information, through to the production of outputs intended as input into the more familiar activities of strategy development and strategic planning. The framework is also useful as a diagnostic tool for examining how foresight work and strategy are undertaken, as well as a design aid for customised foresight projects and processes. Some observations and reflections are made on lessons learned from a two-and-a-half year engagement as an organisationally-based foresight practitioner.

Keywords: organisational implementation, generic foresight framework, diagnostic tool, design aid

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doi:10.1108/14636680310698379 where it won a Highly Commended Award from the journal's international editorial advisory board for the 2004 Emerald Publishing Literati Club Excellence Awards (see Foresight vol.6, no.5, 2004).

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1 Introduction

This paper describes a generic foresight process framework developed as part of the introduction and implementation of foresight into an organisation with pre-existing strategy development and strategic planning activities. It has proven to be very useful as a practical tool for clarifying to organisational personnel at all levels the important inter-relationships and distinctions between these three types of activity. In addition, the framework has also proven to be very useful as a practical tool for diagnosing where and how certain approaches to foresight and strategy work may need improvement or refinement. It has been useful both for understanding and evaluating the manner by which different methodologies may be combined, and as a basis for designing new and innovative methodological processes, practices and interventions tailored to specific organisational circumstances. Reflections and observations on some key learnings which have stemmed from this work are made throughout.

An underlying objective of this paper is to report back to the foresight practitioner community on a specific instance of practical foresight implementation. The framework described here flows from an adaptation of existing theory and methodology, and is designed to support and stimulate the emergence of new ideas for foresight praxis. As such, this paper represents an attempt to 'close the loop' of action research (Senge & Scharmer 2001), something which is necessary for the continued growth and health of foresight as a specialised and professional knowledge discipline. The intention is that this paper will contribute to the continuing cycle of knowledge creation within foresight work in general, and organisational implementation of foresight in particular.

2 The organisational context for foresight at Swinburne

Foresight, Planning and Review (FPR) at Swinburne is located organisationally in the Office of the Vice-Chancellor, to whom the unit's Director reports. It was formed in 1999 following a decision by the then Vice Chancellor (together with the then Vice President) that Swinburne should 'do foresight.' Another aspect of this decision was the establishment at Swinburne of the Australian Foresight Institute (AFI), whose Director and Foundation Professor is Richard Slaughter, the current president of the World Futures Studies Federation.

It is frequently a source of some confusion to people that there are two places at Swinburne with the word 'foresight' in their names. The AFI is a research, teaching and academic institute with an international focus whose mission, in part, is the training of foresight practitioners, while FPR is an internally-focussed administrative department charged with putting foresight into practice for the University. Therefore, as far as we have been able to discern, Swinburne as an organisation is in a unique position with respect to foresight—it is both taught here as an academic discipline, and the University is engaged in incorporating it explicitly into continuing strategy development and strategic planning processes at the highest level. We have had an opportunity to establish foresight at Swinburne as both an area of academic excellence (via the AFI) and as an area of competitive advantage (via FPR).

My own position with respect to these two centres of foresight at Swinburne is also rather unique. When I arrived at Swinburne in early 2000 it was to work with Prof. Slaughter at the AFI as a contractor on a small project. When that short-term contract ended, I applied for, and was subsequently appointed to, the new 'strategic foresight analyst' job which had only just been created in FPR. From August 2000 until December 2002, I was involved as a member of a small

at best, and open hostility at worst. During that time, I occasionally taught in the AFI, providing a practitioner's view 'from the trenches', as it were, to the students undertaking the AFI's courses on Strategic Foresight. This practical orientation to foresight, in addition to the obvious necessity for intellectual rigour provided by the academic structure, is a hallmark of the AFI's courses. In January 2003, I returned to the AFI in an academic role, which has provided the opportunity to teach what I have learned as a practitioner to other practitioners.

FPR was charged, upon its creation in 1999 (in a slightly different form than at present), with the mission of developing, implementing and continuously improving the University Planning Framework in ways that meet the needs of the University community, and with developing a strong foresight capacity to underpin and inform the University's strategy development. This continues to be a major part of the mission of FPR. Most of the University's planning framework—within which my specific contribution to implementing foresight at Swinburne has been made—was already in place before my arrival, put there largely single-handedly by the Director of FPR, Maree Conway.

What follows below is a description of one aspect of my work as a member of FPR—an easily understandable (or so it was meant to be) foresight process framework I developed during late 2000 which would guide our approach to communicating the 'message' of fore-sight, while at the same time forming an intellectual and conceptual framework within which to operate. The diagrams included herein are taken or adapted from actual presentation slides used during seminars and workshops. They are examples of attempts to 'de-mystify' the foresight process in ways that are intended to be easily and quickly grasped. Often, there were only a very few minutes to get people's attention and to get the message across, so the goal was always to present complex ideas as simply as possible. For a detailed description of Swinburne's early experience in attempting to incorporate foresight into pre-existing strategic planning, see the paper by Conway (2001).

3 The staged approach to implementing foresight

Foresight is being implemented at Swinburne using what Slaughter (2002, p.232) calls the pragmatic approach to foresight—addressing the strategic question of how to survive in an increasingly competitive (in this case, education) environment. While this implementation of foresight processes is informed by the solid discipline and academic rigour of futures studies, it must also operate within the confines of the strategic reality of Swinburne needing to remain viable as an organisation. Maintaining this balance between rigorous intellectual discipline and practical pragmatic utility is of prime importance in the sceptical and political environment of the organisation.

While conventional strategic planning is well established in Australian universities, the introduction of a 10–20-year foresight time horizon which explicitly forced a longer-term perspective into the existing planning mind-set met, needless to say, with some problems. There was disbelief, frustration, and even anger at being asked to think beyond the 'more realistic' time frames of one-to-three years out to what were considered lunatic time frames. Jokes about crystal balls and tea leaves were common, as were derisory remarks about the usefulness of the activity—and the (mis)perceived cost of doing it. It was abundantly clear that very few people had any real understanding of what foresight work is all about. It was also very clear that a good

deal of education needed to be done to de-mystify futures and foresight work before any meaningful introduction of methodologies could be undertaken.

Therefore, the method of implementation was based on a two-phase staged approach—education first, methodology second—with the following rationale. An initial education phase ‘prepares the ground’; the second phase then establishes the context for foresight processes and methodology within the organisation in a way that can ‘take’, as it were. These two phases are not separated in time and are best thought of as overlapping waves; different parts of the organisation may be at different stages of the overall implementation process. The introduction of foresight concepts and ideas through an education phase assists the creation of a shared vocabulary for people to use in daily interactions. When this effect is widespread and natural, a language for thinking and speaking about the future is embedded. Only with this foundation in place can foresight processes be meaningfully introduced into existing planning processes. These foresight processes are gradually adopted until they too become embedded in the strategic processes of the organisation. When this state is achieved, the organisation as a whole has a foresight capacity; through widespread shared understandings, concepts, processes, and what van der Heijden (1996) calls ‘strategic conversations’, rather than being localised within a few specific individuals—a situation which is both strategically unsustainable and extremely unwise.

The key goal of the implementation of foresight at Swinburne is simply this: rather than foresight being a separate, special and merely ‘episodic’ occurrence which shines forth briefly and then vanishes without trace, the intention was to make it a permanent, continuous and totally normal part of all planning at all levels of the organisation. One way of normalising foresight was to get it in front of people at every opportunity. This we did via a variety of means. In my role as a foresight analyst, I edited frequent email ‘foresight snippets’ as well as an environmental scanning newsletter, prospect. They were designed to be ‘conversation starters’ for the strategic conversations mentioned above. The Snippets focussed on the broader social environment in which the organisation is embedded—items of interesting, challenging and sometimes weird information which ‘may or may not’ have direct obvious relevance to the organisation—while prospect provided more obviously ‘serious’ information about specifically education-related developments which were also related to the five main strategic ‘themes’ of the university. These publications had the dual role of both raising awareness of futures-related issues in the organisation as well as becoming a medium for disseminating strategic intelligence.

The initial wide-scale education phase is largely complete, now focussing on new staff. The methodology phase has also been operative for some time, using scenario planning as the first methodology because of its long pedigree and track record—something which was important for the prevailing mind-set of this organisation—with other methodologies being introduced as appropriate to particular projects. For example, FPR were commissioned to run exploratory workshops for the early part of the Student Experience Project in 2002. For these I chose to use causal layered analysis (Inayatullah 1998a) as the methodology. The workshops were considered very successful because of the uncovering of ‘deeper’ layers of understanding around the issue being explored, and because of the novel approaches and proposed solutions which these understandings engendered. Half- and one-day scenario workshops were run during 2001 in several administrative and academic units, preparing the ground for the major Swinburne Scenarios Project undertaken in 2002. The full roll-out of the Swinburne Scenarios continues in 2003 with the production of a workbook and workshop designed for use at each level of the organisation: from the academic School or administrative Unit level to the Division level, and so on up to the University level. Foresight is now well on the way to becoming a mainstream activity in the organisation.

4 On foresight, strategy and planning

In our daily work in FPR, we often encountered confusion among staff about the relation between strategic thinking, strategy development and strategic planning. The confusion between these different activities lies essentially in the mistaken belief that they are all

the same thing—which of course they are not. They are, in fact, three quite separate but mutually inter-dependent activities which each have decidedly different foci of interest, and which each require quite different styles of thinking for their proper execution. We found ourselves having to explain these differences to people on so many occasions, public and private, in workshops and in meetings, that we incorporated elements of the text below into some of our presentation slides, in order to 'short-circuit' mistaken beliefs before they could take hold in an audience beyond any hope of extirpation. Perhaps some of the text and ideas below may also be useful to you.

Experts on strategic management, such as Mintzberg (1994), or Liedtka (1998), have characterised the essential difference between strategic planning and strategic thinking. In essence, says Mintzberg, strategic planning "has always been about analysis —breaking down a goal or set of intentions into steps, formalising those steps so that they can be implemented . . . , and articulating the anticipated consequences or results of each step" (Mintzberg 1994, p.108). This is clearly an activity requiring thinking which is strongly analytical, logical, deductive and pragmatic, in order to ensure that things stay 'on track.' "Strategic thinking, in contrast," he says, "is about synthesis. It involves intuition and creativity" (p.108) to formulate an integrated perspective or vision of where an organisation should be heading. It is generally intuitive, experimental and disruptive and attempts to go beyond what purely logical thinking can inform. Because information about potential futures is always incomplete, the thinking required for success in this activity needs to be 'synthetical' (as it were) and inductive, rather than analytical and deductive.

Foresight, then, in an organisational context, is an aspect of strategic thinking, which latter is meant to open up an expanded range of perceptions of the strategic options available, so that strategy-making is potentially wiser. Foresight (as strategic thinking) is concerned with exploration (based on limited and patchy information) and options, not with the steps needed for the implementation of actions, which is the realm of strategic planning. The former is intuitive, disruptive and 'what if?' in nature; the latter is goal-oriented, pragmatic and 'make it happen/can do!' in nature.

The junction between these two activities is the mysterious 'black box' of the strategy development process or strategy-making itself, where a particular goal or objective is actually set or a decision made. The focus here is on assessing options, examining choices, making a decision, and/or setting a goal, objective or destination. Mintzberg and collaborators (Mintzberg et al. 1998) discuss ten major 'schools' of strategy and highlight their different assumptions, approaches and foci. The 'cognitive' school is concerned with the 'mysterious process' of the actual creation of strategy.

Thus, in brief; strategic thinking is about exploring options ; strategy development is about making decisions and setting directions, and strategic planning is about implementing actions. Problems arise when one of these activities is elevated to pre-eminence, rather than seen as simply a part of a necessary, and much wider, process—all three are needed and vitally necessary for successfully confronting the strategic environment.

We positioned foresight, therefore, as an element of strategic thinking, which is an input into strategy-making, which then directs strategic planning and action. We were always careful to stress that it does not replace strategic planning. Rather, we suggested that fore-sight work 'enriches and enhances' the context within which strategy is developed, planned and executed. In colloquial terms, foresight and strategic thinking tend to resonate with the question: 'what might we need to do?' In contrast, strategy development asks the question 'what will we do?', and strategic planning the question 'how will we do it?'

Hayward (2004) has used Stafford Beer's Viable System Model (VSM) as a basis for understanding foresight in organisations. The most accessible of Beer's own writings on the

VSM are found in a companion volume (Beer 1984) to two earlier and much more demanding volumes. Hayward's (2004) paper shows where foresight is properly placed in the overall complex system which is an organisation, how it may be facilitated, what roles it can and should take and, most importantly, explains why foresight practitioners and management are so often in conflict over priorities and concerns.

5 Origins of the foresight framework

The framework emerges from a combination and reworking of ideas found in three main sources. I will not dwell on the details of these sources, preferring to simply note key aspects and leave it to readers to follow up as their own interests dictate. Some of this work was reported in an abridged form in a conference paper at the Foresight conference held at the University of Strathclyde, Glasgow, Scotland on July 11–13, 2002 (Conway & Voros 2002).

As discussed above, Mintzberg (1994) makes a clear distinction between strategic planning and strategic thinking. Horton (1999) has laid out a broad, three-phase process for doing foresight work. Phase One consists of gathering Inputs ; Phase Two of Foresight work itself, and Phase Three of Outputs and Actions. Phases One and Three are relatively self-explanatory. Phase Two of her process consists of two steps: a Translation step—to translate the information gathered in Phase One into a form which the organisation can understand—and an Interpretation step, where the translated knowledge needs to be converted into understanding.

I took the broad structure of Horton's framework and, using Mintzberg's notion of the separation of strategic thinking from strategy-development and strategic planning, separated Horton's Phase Three into two distinct elements: the Outputs of the foresight process, and the Actions taken as a result of it. As I see it, the Actions step is really just the more usual organisational processes of Strategy Development and Strategic Planning (which will be called simply 'Strategy' below), the concepts of which are already familiar to most people in organisations.

I also explicitly separated the outputs of Foresight work from Strategy because of the very real possibility of Foresight becoming a convenient scapegoat for ineffectual action. In other words, one must be clear that the Foresight process simply provides input into the consideration of decisions and the implementation of actions, which is the role of traditional strategy work. If this strategy work is not done, or done badly, it must be clear that it is a separate activity from the foresight work which preceded it. Because 'foresight' is usually new and unfamiliar (and may have opponents within the organisation who perhaps see it as a threat to their power base, or simply just don't 'get' it), in real-world political environments such as organisations, this clarity of the separation of roles and responsibilities is very important.

Thus, in broad outline, the framework has a four-phase structure: Inputs; Foresight; Outputs; and Strategy, modelled on Horton's, but which differs significantly in the details of the phases, especially the Foresight phase. This broad outline is shown in Figure 1. The comments on the right hand side of Figure 1 indicate either the type of activity involved, or the main focus/output of the phase.

The Strategy 'phase' as portrayed in a single box is really just an attempt to denote on a simple diagram the many highly complex and continuing strategic processes which go on in an organisation, in order to visually suggest that Foresight is an input into Strategy processes. These latter obviously extend their influence beyond the simple box form portrayed in the diagram and inform several layers of organisational activity below, such as managerial/allocative and tactical processes, which in turn inform operational processes. My

interest in this paper, however, is merely to show how Foresight interacts with and 'feeds into' Strategy, which latter is well understood and has a huge literature concerning it. For that reason, 'Strategy' is considered a 'given' here. One should remain mindful of these considerations in what follows.

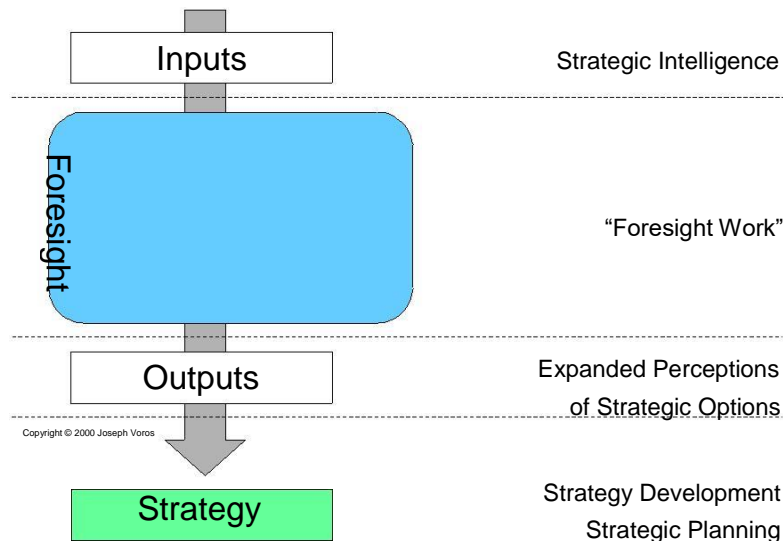


Figure 1: The generic foresight process framework, in broad outline form

Slaughter (1999, p.287) has discussed the development and application of 'strategic fore-sight' and suggested several methodologies which could be employed. He gives four main types:

- Input methods;
- Analytic methods;
- Paradigmatic methods; and
- Iterative and Exploratory methods.

In brief, Input methods are used to gather intelligence from a variety of sources. This type of method maps closely with Horton's Inputs phase, and with the Inputs step in Figure 1. Analytic methods are used to analyse and assess factors and their interrelationships, usually as a first step towards deeper and more detailed work. This is similar to, but not the same as, Horton's sub-step of Translation. Paradigmatic methods seek to deepen understanding, and thus have a similar goal to Horton's Interpretation sub-step, but again differ somewhat. Iterative and Exploratory methods are used to explore future states to create the 'forward views', so they are 'prospective' in nature.

Combining, in this way, the essential ideas of Mintzberg's separation of roles and responsibilities of strategic thinking, strategy development and strategic planning; the broad phase approach of Horton; and the specific methodological suggestions of Slaughter, we arrive at a generic process framework for foresight work. This framework is designed to be scalable from individual to workgroup to organisation to higher degrees of

human interaction, and is detailed in the next section.

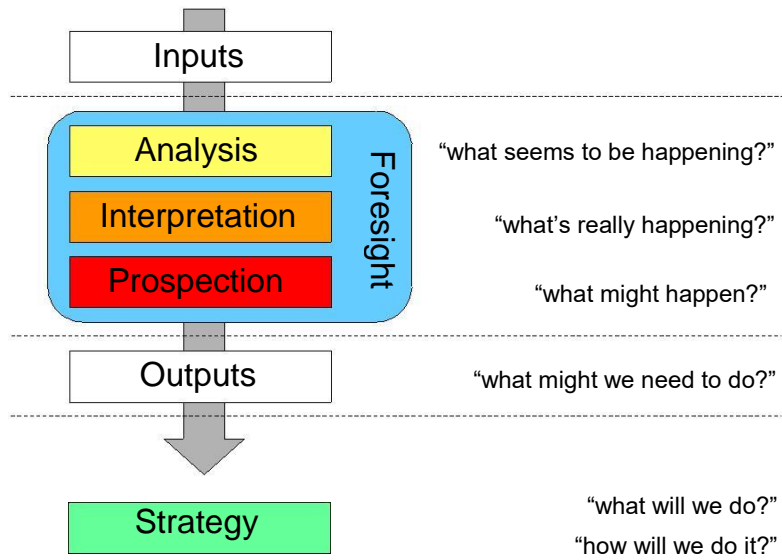


Figure 2: The foresight framework, in 'question' form

6 The foresight framework in detail

Here the four key elements of the process are described in more detail: Inputs; 'Foresight' work; Outputs; and Strategy (i.e. continuing strategic processes). A more detailed diagram of the generic foresight process is shown in Figure 2. While some terms are used which are similar to those of Slaughter and Horton, the terms used here have a different meaning here than those implied in their work. In Figure 2, the comments on the right hand side are some typical questions which were used in presentations to illustrate the type of activity or thinking which is undertaken at each step. They are not definitive, but rather attempt to show the 'flavour' of the activity in that step. Feedback from participants suggested that these were very helpful in understanding the distinct contributions from each step in the overall process.

Note that while the diagram appears to portray this process as a simple linear one, conceptually there are very many feedback loops from the later phases to all of the earlier ones—and therefore also many feed-forward effects as the loop pathways are traversed again, perhaps more than once. These are omitted for the sake of simplicity to show only the 'broad flow' of the overall process, absent all of the finer details of recursion loops.

-
- Inputs. This is the gathering of information and scanning for strategic intelligence. Many methods, techniques and frameworks exist, of which the 'Delphi' technique and 'environmental scanning' (Choo 1998) are perhaps the best known. The tools and techniques of 'competitive intelligence' are relevant here. It is also where, in workshop formats, the group are asked for their ideas and insights, such as through brainstorming ideas or through what Slaughter (1999, p.292) calls 'constructing the near-future context'—asking a set of key questions, designed to open out the thinking about the near future (Slaughter 1996), which have proven very useful in workshop settings. When the activity of gathering inputs is undertaken at the organisational level (as opposed to workshop formats), we chose the term 'strategic intelligence scanning' (as shown in Figure 3), or sometimes simply 'strategic scanning' (Brown 1999, p.9) in preference to the somewhat passive term 'environmental scanning' or the somewhat negative term 'early warning system'. Most strategic planning involves something called 'environmental scanning' which 'everyone knows' how to do. I wanted to distance our approach to strategic scanning (Voros 2001, 2003) from existing 'well known' methods of environmental scanning, so the name chosen was something deliberately different.
 - 'Foresight Work'. This can be conceived as comprising three broad steps which follow a logical sequence. The first step is
 - Analysis, which is best considered as a preliminary stage to more in-depth work, rather than as a stand-alone technique itself. The sort of question asked here is 'what seems to be happening?' The goal is to seek a 'first cut' at creating some order out of the bewildering variety of data which the Inputs step usually generates, so it is similar to Horton's Translation sub-step. Common tools here are trend analysis, cross-impact matrices and other such analytical techniques.
The results of the analysis are then fed into a second step,
 - Interpretation, which asks the question 'what's really happening?' and seeks to 'probe beneath the surface' (Slaughter 1989) of the analysis to look for deeper structure and insights. This is the realm of critical futures studies (Slaughter 1999, p.203), causal layered analysis (Inayatullah 1998a), systems thinking, and other 'depth' approaches to futures thinking. I also developed a generalised approach to layered analysis, based in part on these approaches, which will form the substance of another article. (Suffice it to say here that it extends from the well-known 'systems iceberg' metaphor—events, patterns and trends, system structure—through to the levels of worldviews and myths as found in causal

layered analysis, to the deeper structures of consciousness itself and how these are influenced by macrohistorical forces.) In practice, most of our work in FPR extended down to merely the level of system dynamics and drivers, although occasionally it extended to deeper levels in, for example, our work on the Swinburne Scenarios.

The third sub-step is the actual creation of forward views,

- **Prospection.** I had to invent the word Prospection to denote, in a form which could be displayed in a small box on a PowerPoint slide, 'the activity of purposefully looking forward to create forward views'.¹ This step is where various views of alternative futures are explicitly examined or created. It is where scenarios, 'visioning' and 'normative' methods are located in the broader foresight process. I tend to locate 'backcasting' methods here as well, even though they tend to be analytical by nature, because they presume the existence of a forward view. One need not necessarily be bound to use explicitly 'futures'-type methods at this step, either. For example, simply evolving a systems map or causal loop diagram forward in time with different assumptions is also a perfectly valid prospective technique to examine how different futures may unfold. The question asked at this stage depends upon which type of potential futures are under consideration—possible, plausible, probable or preferable. The one shown in Figure 2—'what might happen?'—is for the broadest class of imaginable futures: the 'possible'. See Section 7 for a more detailed discussion of a taxonomy for types of futures.
- **Outputs.** The outputs of foresight work are two-fold: tangible and intangible. Some tangible outputs would include the actual range of options generated by the work. Intangible outputs would include the changes in thinking engendered by the whole

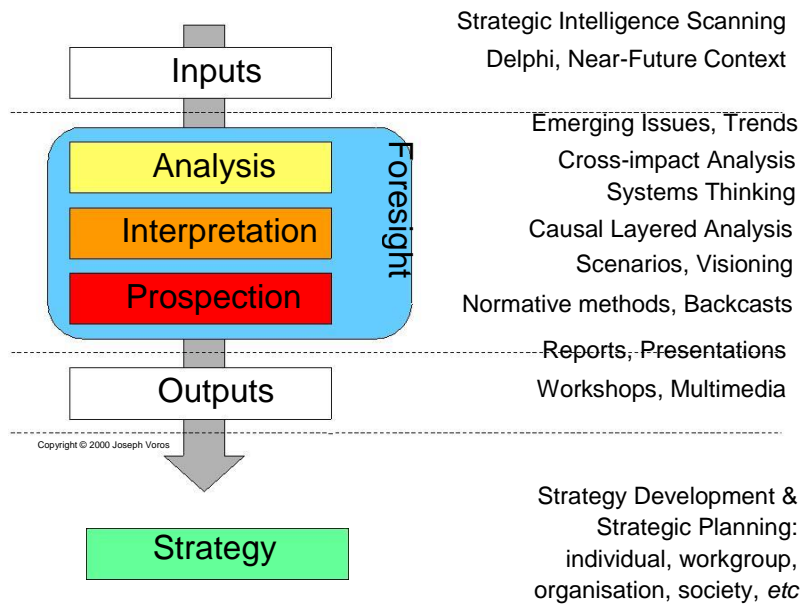


Figure 3: The foresight framework, with some representative methodologies indicated

process, especially the insights generated in the Interpretation step and by the creation of forward views in the Prospection step. The intangible output might be somewhat difficult for some hard-headed, 'objective' people to appreciate, or even recognise. But it is undoubtedly the more important form of output because of the way it alters the very mechanism of strategy development itself, namely the perceptions of the mind(s) involved in strategising. The methodologies employed in the Outputs step need not be specifically futures-related, because the focus of this step is the 'getting across' of insights, and/or the stimulation of thinking about options, prior to and as inputs into more formalised strategy work. A variety of methodologies could be employed here to present the Outputs of the foresight work, such as workshops, reports, role-play, film, multimedia, full-immersion experiential events, etc. Thus, this is a general step which could use any number of appropriate tools for its execution, from a variety of contexts. It is intended to generate an expansion of perceptions and perceived options. This expansion could be attempted directly through overt questioning or similar means, or indirectly by engineering an experience which provokes such questioning or expansion. One question which captures some of the essence of this step is 'what might we need to do?'

At this point, foresight has done its real job—the generation of (hopefully) an expanded perception of strategic options available. This output now feeds into

- Strategy. The final part in this framework is that of Strategy, about which very little will be said here, given the earlier discussion in Section 4 about the relationship between foresight, strategy processes and planning. Suffice it to say that since foresight has done its job, it now hands over the output for consideration by decision-makers in making decisions and directing strategic actions for implementation (i.e. the more familiar activities and processes of strategy development and strategic planning). The results of Strategy processes need, of course, to be constantly fed back into the Inputs of the overall foresight framework, 'closing the loop', so that continuous re-assessments and 'course corrections' are possible along the 'strategic journey'. (Of course, there are in reality feedback loops from each step to all those which are prior. These loops are not shown in the diagrams for reasons of diagrammatic simplicity, rather than through conceptual omission, and this point should be borne in mind whenever the framework is being used.) We have made use, in our foresight workshops and seminars, of Hardin Tibbs' (2000) metaphor of the 'strategic landscape' to encapsulate this notion of a strategic actor undertaking a strategic journey into the future. When we have extended that metaphor explicitly with 'foresight' as a means of viewing the strategic landscape, the already-powerful image/metaphor has been strengthened all the more.

A more detailed form of the foresight process can be seen in Figure 3 showing, in particular, some of the methodologies applicable at each step. The process is designed to be as general as possible so that it can be applied on any scale, from the individual level to workgroup to department to branch to organisation to society, etc.

7 Interlude : Types of futures and their utility

The futures literature abounds with mention of (usually) 'possible, probable and preferable' futures. I have found it useful to distinguish between five classes of alternative futures: potential, possible, plausible, probable and preferable, in order to help students, and participants of foresight workshops and processes, get clear about what sort of futures they are thinking about. For example, the types of futures considered in our scenario planning workshops were usually plausible futures, while in some 'visioning' workshops they were most often preferable futures. The definitions I use for these classes of futures, adapted from those of many, many others are given below. Elements of this taxonomy go back at least to Henchey (1978), while of use also was the manner of characterisation of futures used by Hancock and Bezold (1994), as was their metaphor of the 'futures cone', which was a valuable aid in presentations. An adaptation and extension of this is shown in Figure 4.

Potential futures. When speaking about alternative futures in general without specifying any of the other four classes below, I generally use the term potential futures. This class contains all of the futures which lie ahead, including those which we cannot even begin to imagine. This is by far the largest segment, of course, because of the impossibility of ‘discovering’ future facts, and because of what Clarke (2000) has called ‘failures of imagination’. In presentations, I take the second of Amara’s (1981) three foundational premises of the futures field (i.e. ‘the future is not pre-determined’) as the primary foundational premise, for it yields up the consequence of an infinite variety of potential alternative futures.

If we do not accept this premise then the entire futures cone ‘collapses’ into a single future time-line, all potentialities disappear, and all our futures work becomes simply an attempt to find more information about this pre-determined but unknown future. ‘The’ future (i.e. singular in this view) thereby becomes merely an information problem, rather than being undetermined. It remains unpredictable, however, because of the lack of future facts and/or the difficulty of finding or generating information of arbitrarily high accuracy.

In relativity physics, there is a region outside the so-called ‘light-cone’ which is unknowable except at some later time, owing to the finite speed of light. This is also a very useful reminder and metaphor for our forward views; some futures are beyond—sometimes well beyond—our power of imagination, and thus beyond the normal boundaries of the conventional futures cone. In this metaphor, the realm of potential futures ahead is an unknown dark area, while the futures cone is like a car headlight, illuminating the view ahead, as can be seen in Figure 4. The futures cone is always smaller than the totality of potential futures which lie ahead.

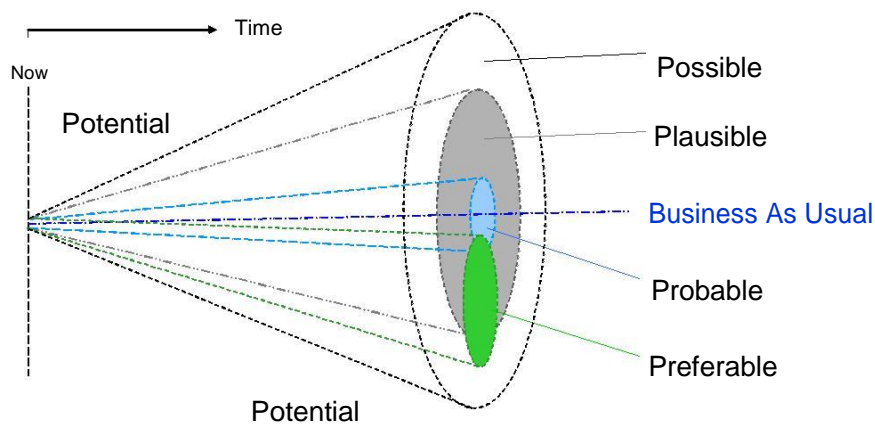


Figure 4: The 'futures cone'. Adapted from Hancock and Bezold (1994).

Possible futures. This class of futures includes all the kinds of futures we can possibly imagine—those which 'might happen'—no matter how far-fetched, unlikely or 'way out'. They might, as a result, involve the use of knowledge which we do not yet possess (the 'warp drive' of Star Trek is a good example), or might even also involve transgressions of currently-accepted physical laws or principles. I tend to characterise this class of futures as being reliant on the existence of some future knowledge (i.e. knowledge we do not yet possess) in order to come about. For instance, the development of a 'warp drive' is something which, while not yet anywhere near becoming feasible, is nevertheless not necessarily ruled out by our current understanding of physics. It is now the subject of research among some mathematical physicists.²

In terms of the Prospection step, the question used to prompt for Possible futures is the one shown in Figure 2: 'what might happen?' (i.e. usually based on new knowledge in the future).

Plausible futures. This class encompasses those futures which 'could happen' (i.e. they are not excluded) according to our current knowledge (as opposed to future knowledge) of how things work. They stem from our current understanding of e.g. physical laws, processes, causation, systems of human interaction, ways of knowing, etc., not necessarily from our knowledge of actual specific facts, but rather from our more general knowledge of 'how things work'. In other words, they depend upon what is allowed or considered reasonable by our current understanding of how the world operates. For example, consider the global economic system. While many people might often think about replacing it with something 'better', to suggest that it be replaced by a new form of exchange based on 'hugs and kisses'—rather than the equivalents of 'dollars and cents'—is to move outside the realm of what many would consider 'the way the world really works,' and thus outside the realm of what they would consider plausible. Such an economic system is possible (according to the definition above), but not yet plausible. This class of futures is clearly a smaller subset of futures than the possible.

In terms of the Prospection step in Figure 2, the prompting question for Plausible futures is 'what could happen?' (i.e. given our current knowledge or understanding of how the world works).

Probable futures. This class of futures contains those which are considered 'likely to happen', and stem, in part, from the continuance of current trends. Some probable futures are considered more likely than others, and the one considered most likely—sometimes called 'business-as-usual'—is a simple linear extension of the present from the past. However, as we know, trends are not necessarily continuous over long periods of time, and discontinuities in the trends may occur. Some trends may fade out suddenly, while new ones may emerge unexpectedly. Some people think that studying or 'reading' trends is the whole game of foresight or futures work. But it becomes very clear to workshop participants from this description that merely reading trends gives rise to a much smaller class of futures than the previous two, and therefore to a dangerously narrow range of forward views.

In terms of the Prospection step in Figure 2, the prompting question for Probable futures is: 'what is likely to happen?' (i.e. based on, for example, current trends).

Preferable futures. The last three classes of futures described above are all largely concerned with informational or cognitive knowledge. This class, Preferable futures, is, by contrast, concerned with what we 'want to' happen; in other words, these futures are more emotional than cognitive. They derive from value judgements, and are more overtly subjective than the previous three classes. Because values differ so markedly between people, this class of futures is quite varied. Of course, as anyone knows who has ever facilitated a 'visioning' workshop where participants are constructing a view of their preferred future, this is the most vexed class of futures. What is preferred depends a very great deal on who is doing the preferring. Preferable (or preferred) futures can lie in any of the previous three classes.

In terms of the Prospection step in Figure 2, the question to ask for Preferable futures is: 'what do we want to happen?' (i.e. based on our values and 'ideas of the good'). Ogilvy (2002) suggests 'what ought to happen?' in his approach to normative scenarios. An equivalent question might also be 'what should happen?'

Another useful tool is the concept of Wildcards. Wildcards are usually defined as low probability events (hence they are out-side the Probable realm) or even 'mini-scenarios' which, if they occurred, would have very high impact.³ Therefore, they can be Potential, Possible or Plausible, according to the above definitions. Examples would include an asteroid or cometary impact with Earth (plausible), or very-high-speed interstellar space travel (possible). Potential wildcards, by contrast, are waiting for us in that realm (outside the imaginably possible) where our powers of imagination are presently useless. Wildcards are, in a sense, a boundary-spanning, -crossing or -smashing tool; they are useful to break through 'bounded' thinking into new realms 'out-side' the boundary. Since the creation of forward views depends so intimately upon the consciousness creating them, and upon the boundaries considered relevant to the defining of these forward views—not to mention the unconscious boundaries beyond which we do not think—the use of wildcards to force an expansion of thinking into new territories of the imagination can be extremely useful. For example, playing with the edge of what people consider 'impossible' is a good way of nudging on the boundary of the possible.

We incorporated wildcards into some of our in-house unit-level scenario workshops. The idea for this came from a web page by Mark Justman (2000), where he speculated on how one might use wildcards with four generic types of scenario adapted from Jim Dator's four generic images of the future. As a basis for the wildcard deck we used the wildcards listed in Petersen's (1997) book, together with a number of others gathered from different sources. The whole workshop group is divided into several smaller groups, each of which

fleshes out a particular scenario based around agreed-upon drivers. The small groups each create a 'first cut' scenario and examine some consequences for the focal issue. Then they are required to draw a wildcard from the deck at random and examine how this wildcard affects their scenario 'world', and their proposed strategy for operating in that world. The presentation slides introducing wildcards are headed 'Suddenly, the world changes. . .', and the implications for scenario worlds are sometimes quite profound.

For example, in one such workshop, one of the scenario syndicates decided to move all their information services off-shore to another continent where labour is cheaper, because it made good financial sense to them in that scenario world, and to use the international communications infrastructure to provide the services back to Australia. They then pulled the wildcard 'long-term global communication disruption'. The effect on their business model due to this was devastating—they literally went out of business overnight! The explicit use of a wildcard had highlighted a potential weakness in their strategy. Thus, they were forced to consider ways of circumventing such an effect, which led to consideration of a more diverse set of strategic options, and a subsequent strategy which was more robust as a result. Another group, pulling a different wildcard, discovered a wonderful opportunity in their case, while still another was not affected at all. The use of wildcards in scenario workshops provides an interesting and often highly instructive input, causing the participants to consider things they might not normally consider. Even the expectation that something unexpected will occur alters the timbre of the strategising thereafter.

Finally, while on the subject of wildcards, an eerie and telling anecdote is called for. The workshop mentioned above was held over two days; as it happens, on September 10 and 11, 2001. We had spent the first day (Monday the 10th) running the usual scenario process, having each of the various small syndicate groups developing their particular scenario world, fleshing it out, and developing a strategy appropriate for it. For the second day (September 11th), we planned to run the wildcard process as described above. One of the wildcards present in the original expanded deck was 'terrorist attack on a major U.S. city or cities'. When deciding which subset of wildcards to use for the workshop, we had consciously removed it from the workshop deck, on the grounds of 'improbability' and 'ir-relevance' to the focus of the scenarios. . . We have often since speculated on whether anyone would have drawn that particular wildcard during that particular workshop on that particular day. Given the events which took place in the USA later that night (Melbourne time) we learned our lesson: never remove any wildcard from the deck. . .

8 The framework as a diagnostic tool

The process as described and shown in the diagrams is also useful for diagnosing how an organisation responds to the strategic environment, as well as showing graphically why using a foresight process is preferable to not.

For example, if, in the full foresight process shown in Figure 3, we remove all the steps between Inputs and Strategy, so that there is nothing modifying the direct Inputs, no Fore-sight work and no distinct Outputs from such a foresight capacity, we can characterise the so-called 'responsive' strategy so beloved of some (pre dot-com-bustion) Silicon Valley companies. This reduced process is shown in Figure 5. Something occurring in the environment is discerned by the scanning system and the organisation reacts to it directly, without any analysis, interpretation, prospection, or even stopping to consider what options such activities might uncover ('no time for such luxuries, we need to be responsive '). This is equivalent to the 'instinctive/reactive' survival 'strategy' of animals. Introduced after a complete discussion of the full foresight framework, this form of diagram unambiguously and un-subtly illustrates the point that explicit foresight work is needed to inform strategy work, lest we

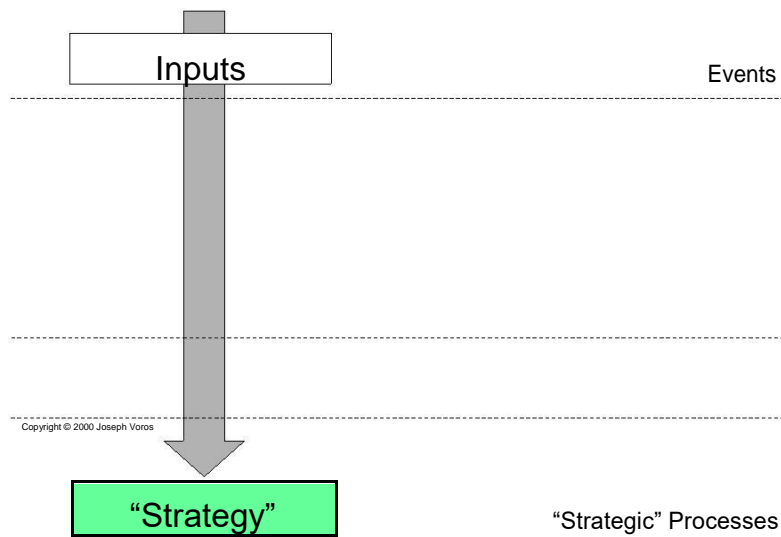


Figure 5: A purely reactive approach to strategy

simply react to everything going on in the environment and pretend to ourselves that we are really being 'highly responsive'.

If we remove only the Interpretation and Prospection steps from Figure 3, we can characterise what we might call a 'shallow' foresight process. In this process, there is some analysis of strategic intelligence which might reveal certain trends, but this produces a fairly thin set of Outputs based upon the clear and obvious present. We can see this process diagrammed in Figure 6. Of course, this is how many organisations actually operate—they believe that understanding 'the' future is simply about 'reading' the trends. By looking at the characterisations in Figure 2 we can see that this is an approach which undertakes strategic processes based merely on what seems to be happening in the strategic environment, absent any attempt to look deeper, or to explicitly examine forward views. The strategic options so produced are therefore rather suspect.

If we then add the Prospection step (but continue to leave out Interpretation) we nevertheless still have, despite the explicit use of Prospection, another example of the production of suspect strategic options, albeit via a more sophisticated process of mystification. This is shown in Figure 7. Some organisations attempt, for example, forecasting based on trend analysis, extrapolation of the present, 'visioning' exercises, or scenario planning using this form of process—the forward views stem from simple analysis alone, and no attempt is made to address the question of what is really happening, either inside the organisation or outside it. In some ways this is an even more risky approach because now there exists the illusion that the strategic options generated are somehow 'better' because of the explicit Prospection step undertaken. However, there is essentially no difference in the quality of the strategic options generated by this modification—they are still rather suspect, based as they are on a narrow set of forward views flowing from a shallow and incomplete foresight process.

With the addition of the Interpretation step there at least exists the possibility of producing some more in-depth understanding as an input into the Prospection step. The level of 'depth' to which the Interpretation step is taken is also variable. Obviously I am suggesting that the deeper this interpretation goes, the more profound the insights are likely to be and thus the more

potentially wise the subsequent perceptions of strategic options generated as

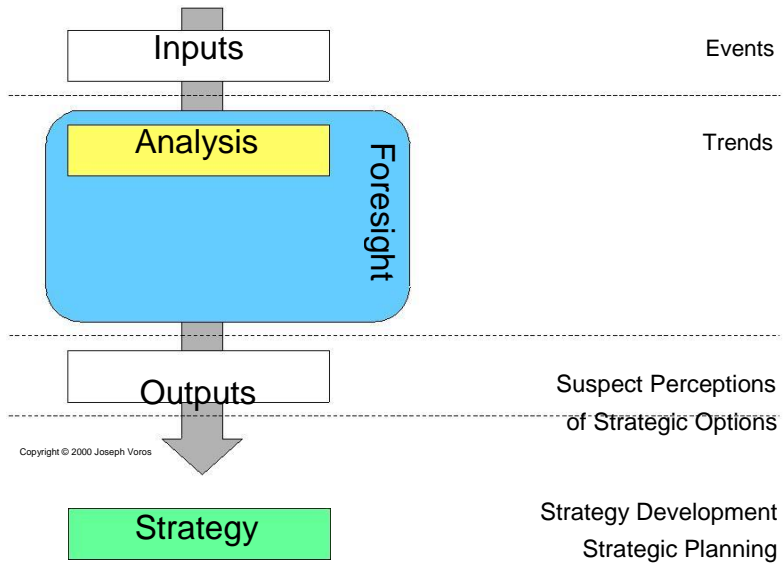


Figure 6: A 'shallow' foresight process

input into Strategy.

9 The framework as a design tool

Another use for the generic framework described in this paper is in the design of specific foresight processes, interventions or projects.

In a recent class for second-year post-graduate students at the AFI, I used the generic framework to analyse some twenty-five or so different methodologies, ranging from competitive intelligence to trend analysis to systems approaches to causal layered analysis to scenarios to 'macrohistory' (Inayatullah 1998b). Some of these are relevant to a single step in the generic process, while others touch upon more than one. Some methodologies are processes in themselves, and are therefore complementary to the one described here. Further, some techniques and methodologies which are not necessarily futures-related or considered to be futures techniques per se, could be used within such a broader process depending on which step is being designed. For example, the Outputs step could make use of any number of non-futures-related methodologies to 'get the message across'. I recall hearing of an instance where practitioners had started to present the outputs of a foresight exercise to executives in a conventional slide-show form when the venue was 'invaded' by dozens of children who 'kidnapped' the executives, bundled them blind-folded into waiting vehicles and 'took them to "the future" ' in a nearby warehouse. Once there, the decision-makers were then presented with what the practitioners had really wanted them to see and hear about (set up ahead of time), in a full-immersion experience guided by the youngsters, all perfectly stage-managed by the practitioners. While a bit extreme, this example nevertheless illustrates that there are many more alternatives available to foresight practitioners for getting their message across than are considered customary.

In this way, it is possible to assess which methodologies (or types of methodology) fit ~~coherently and synergistically into a generic foresight process, in order to evaluate their~~ relative contribution to an overall process, and therefore to make decisions about which methodologies to use in combination in the design of such a process. By a judicious use of complementary methodologies, any weaknesses in one may be partially mitigated by the presence of another, and the overall process so designed is hopefully the better for it. This approach to design requires that we become familiar with a wide variety of methodologies, but any specific process should only use a small number of these. As is often said, 'less is more'.

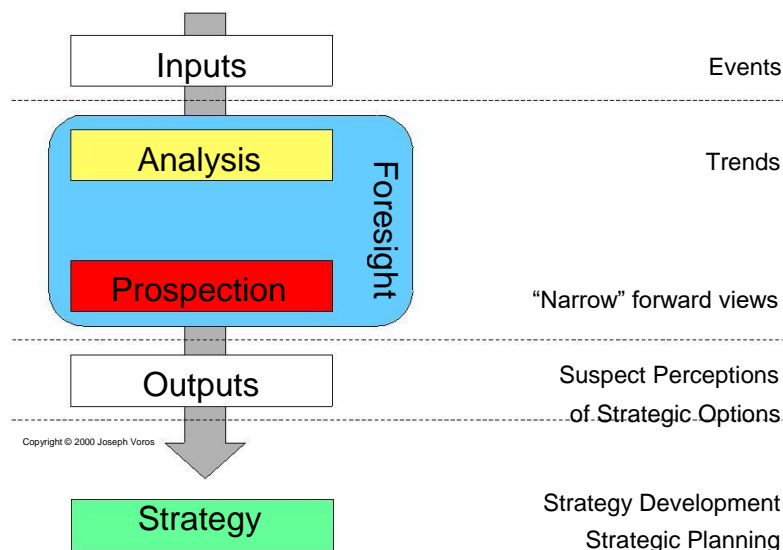


Figure 7: A 'shallow/narrow' foresight process

In FPR we designed half-, one- and two-day unit-level processes using a workshop format, with inputs from the group via brainstorming and consideration of the 'near-future context', analysis of trends, then interpretation down to the level of 'deep system drivers', finished off with the simple two-by-two form of scenario matrix for the prospection step.

Further consideration of options leading to strategy development is undertaken in a separate strategic implications workshop. For the major Swinburne Scenarios Project, the main form of Output is a workshop with workbook designed to take people through the thinking which informed the creation of the ('plausible') scenarios, and to use these scenarios as starting points for thinking about and designing a 'preferable' future for their organisational unit. The depth of interpretation in that project went well beneath the more usual 'system drivers' to the deeper levels of worldviews, human value systems and to how these are being shaped by macrohistorical forces. For the Student Experience Project (commissioned ostensibly as a 'visioning' process), the main format was, again, workshop-based, for this is an important part of the culture here. Using causal layered analysis to take participants from the superficial level of events, through analysis to deep interpretation at the worldview and metaphor levels, the purpose was to generate a basis for considering what sort of things might be present in a class of preferred futures they might wish to begin constructing. The prospection step was implicit rather than explicit, because we did not seek to create preferred futures; rather, we sought to elucidate key aspects of what preferable futures would contain. These distilled aspects (i.e. the Outputs) were then taken up by several teams on the project and carried forward into a more detailed design phase.

These examples all illustrate the key point: with an overall generic foresight framework, one may use the concept of 'flow' through the general process to design and create specific instances of the process using methodologies and tools appropriate to the context in which

it will be employed. This is a considerably more flexible approach to foresight praxis than to simply arrive with a single methodology in hand and be bound to use it (as some consultants have been known to do). As the old saying goes 'if you've only got a hammer, then everything looks like a nail'. The generic process framework is designed so as to allow easy customisation to suit the specific needs of the particular project or foresight commission; it is a template from which to forge a new tool appropriate to the particular circumstances in which the tool is to be used.

10 Concluding remarks

This paper has described a generic framework for foresight, designed in such a way that it can be used for: understanding some of the key steps involved in foresight work; the diagnosis of existing processes; and the design of new processes. It stems from on-the-ground experience of implementing foresight in a sceptical and conservative organisation. Key learnings during our attempts at implementation have been interspersed throughout in order to ground the theoretical discussion in real-world practical experience.

This has been one example of foresight praxis—many more are needed to grow the knowledge base of practical know-how in facilitating foresight in organisations. For it is only in this way that attempts to develop new theories and models of foresight and futures work can be infused with the fresh insights and deep understandings needed to ensure that the knowledge discipline of futures/foresight remains relevant. Without a continuous renewal of theory, methodology and praxis, the knowledge creation required to build the discipline of futures and foresight will slow, stop and stagnate. If we as futurists are to also remain relevant—whether as academics, consultants, or those working in organisations—then we must each be open to the work being done by the others, even if it is outside the perceived boundaries of what we do. We must all partake in the 'ecological flow' of knowledge and knowledge-creation. It is my hope that this paper will help to ease this flow along.

Acknowledgements

The author would like to thank Peter Hayward, Richard Slaughter and Maree Conway for comments, feedback and helpful suggestions.

Notes

1. From 'pro' = 'forward', 'spect' = 'look', and '-tion' = the noun form of the action; thus, 'prospection' (the stress falls on the second syllable). This word also acknowledges the French school of futures work and their term *la prospective*, as well as the wider use of the term 'prospective thinking'.

2. The paper by Miguel Alcubierre (1994) on the subject of 'warp drive' first showed the existence of a solution to the field equations of General Relativity having aspects of this characteristic structure. See the 'gr-qc' physics preprint archive located at <xxx.lanl.gov> and do a search on the keywords 'warp drive' to get some idea of the current state of research.

3. There is a discussion of Wildcards at the web site of The Arlington Institute. See <www.arlingtoninstitute.org/focus_topics/wild_cards.html>

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